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Educational News and Editorial Comment

RESEARCH BUREAUS IN CITY SCHOOL SYSTEMS

The Bureau of Education recently published a leaflet describing in some detail the organization and lines of activity of bureaus of research in eighteen city school systems. The information thus brought together shows conclusively that progressive city school systems have adopted as a necessary and permanent part of their routine equipment a staff of officers whose duty it is to make systematic scientific studies of the results of instruction. The reports from the various cities are most encouraging to workers in the science of education.

It is not possible to quote any large section of this publication. The first statement, that from Akron, Ohio, will serve to indicate the type of facts reported.

Organized September, 1920.

Members of staff.—Director, assistant, psychologist, and one clerk; additional assistance called in for a few weeks at a time when work is especially pressing. During the first year use was made of the Juniors and Seniors in the normal school. Since then the work has been so organized that principals and teachers assist.

Total amount expended for research work, 1921–22.—$6,110.37.

Scope of work.—(1) To keep up a continuous survey of elementary-school work through the use of standardized educational tests; (2) to train teachers in the use of educational tests; (3) to help improve instruction; (4) to experi-

ment in classification; (5) to handle all mental testing; (6) to form special classes under direction of psychologist; (7) to make age-grade studies; (8) to develop course of study for the elementary grades.

Studies made.—1920–21: A survey of schools in reading, arithmetic, spelling, and penmanship; measured progress made during year in reading and arithmetic; measured relative effectiveness of Courtis and Studebaker practice material on arithmetic as compared with usual methods of drill.

1921–22: Survey in arithmetic each semester; program in arithmetic each semester; relative effect of experimental methods on reading compared with regular methods; relative effect of Courtis and Studebaker practice material compared with regular methods; correlation between success in 9B work and score made in national intelligence examination, grade A; classification based on results of intelligence examinations and work on school subjects in one large elementary school; age-grade studies.

Studies have been published in the report for the bureau for 1920–21. It is the intention that, as the work develops, the bureau of research will take over the supervision of the elementary grades from the fourth up. The bureau also expects to make certain statistical studies and a survey of school buildings.

Probably the greatest help given by the bureau has been to find out the points at which the teaching is weak and to determine the methods and devices whereby these weaknesses can best be overcome.

THE MEETING OF THE AMERICAN HOME ECONOMICS ASSOCIATION

The sixteenth annual meeting of the American Home Economics Association will be held at the University of Chicago from July 30 to August 3, 1923. The annual meetings present an especial appeal to all who are interested in any phase of home economics teaching. The general sessions this year will be devoted to the discussion of the education and the sociological relationships of home economics, problems of child welfare, and other related topics; the section meetings will provide an opportunity to discuss teaching problems in all types of work.

Miss Grace Schermerhorn, supervisor, New York City, will speak on "Elementary Home Economics." In the institution section there will be a discussion of the school lunchroom and the training necessary for its management. The subject of tests as an influence in the selection of subject-matter and in the organization of courses of study is an important one and will be considered by the teacher-training section. Teachers are familiar with tests for

all of the fundamental subjects taught in the elementary grades, and they are coming to see the necessity of providing and administering tests in home economics if this subject is to hold its place in the curriculum. The section on health education includes such topics as the "Psychology of the Preschool Child," by Mrs. Helen Thompson Woolley, Merrill Palmer School, Detroit; "Some Experiences of a Physician with Child Feeding Cases," by Dr. Walter H. C. Hoffmann, Children's Memorial Hospital, Chicago; "The Mansfield Child Health Demonstration," by Dr. Walter N. Brown, director, Child Health Demonstration of the National Child Health Council, Mansfield, Ohio; and other demonstrations of nutrition classes with children. Educators are becoming more and more interested in the relation between what and how a child eats and his general well-being and hence his ability to do good work in school.

THE TOWNER-STERLING BILL

The editor of the *Journal of the National Education Association* tells, in a recent editorial, of a gross injustice which has been done within the United States Chamber of Commerce to the Towner-Sterling Bill. It appears that some enemies of this bill have forced a referendum of the chambers of commerce all over the country. This has been done at a moment which is altogether inauspicious because just at this time business men do not want to be taxed, and they are unfavorable to federal participation in public affairs that have heretofore been left to local communities. The result, according to this editor, is that the friends of the bill are greatly encouraged, although the vote went against the bill. The adverse vote, like all attacks, adds to the strength of the bill.

The editor forgot to mention a few interesting facts. The proponents of this bill have made a special effort for the past three years to get chambers of commerce to pay attention to the bill. They have asked again and again for indorsement. They were represented on the committee which conducted the referendum by one of the ablest of the members of the National Education Association Commission which framed the bill. The report of this committee very properly stigmatized the financial part of the bill as a

piece of the cheapest kind of political jobbery. The report of the committee ridiculed the protestations in the bill against federal control. In many cities the best educational speakers who could be secured addressed the chambers of commerce before the vote on the referendum was taken. An earlier referendum of the chambers of commerce was what passed the Smith-Hughes Bill. The vote against the Towner-Sterling Bill was three to one.

How long will the promoters of this bill go on throwing sand into the eyes of the teachers? The editor of the *Journal of the National Education Association* can readily find out at headquarters, if he does not now know, that the former field secretary, when in charge of the bill, agreed to promote the program of the administration. He knows that Judge Towner said repeatedly and in public that the financial part of the bill is not now under discussion. He knows that every possible effort has been made by the friends of the bill to get chambers of commerce to support it.

Is it not time for a frank recognition of the fact that, with Judge Towner gone, with the defects of the bill clearly understood in Washington, with the President offering his support to a policy which will give education a place in the Cabinet, the only wise course is to stop bluffing about the Towner-Sterling Bill? It never had a ghost of a chance of passing. Influential members of the commission which framed it say in private that they never expected the financial part to be enacted. The vote of the chambers of commerce is a death blow, if the bill had any vitality. The part of real statesmanship is to accept the situation honestly and go about developing a constructive policy. Obstinate reaffirmation of allegiance to this bill is about as bad leadership as anyone can offer the National Education Association. It is time that the association be allowed to slough off this thing and play a new part which a bitter and misguided experience has shown to be the wiser and more productive rôle.

STATE PARTICIPATION IN SCHOOL SUPPORT

The bulletin of the State Education Department of New York summarizes in a short article so much illuminating material on state support of schools that we repeat the whole article in order to give

the facts currency supplementary to that which it receives through the bulletin.

Many students of school administration urge a shift of the burden of school support from the local district, where it now rests, to the larger units, state and county. This is urged because public education is conceived as fundamentally a state function, and it is held that adequate educational opportunity can be secured only through a much larger participation in school support by the larger units, particularly the state. According to figures compiled in the Federal Bureau of Education for the year 1920, the proportions of school revenues provided in the country as a whole by the three important units—state, county, and local district—were 16.8 per cent, 11.4 per cent, and 71.8 per cent, respectively. The advocates of a larger participation by the state urge that the state's contribution of 16.8 per cent should be increased at least to one-third of the total, and some would say to 50 per cent or more.

The respective percentages of school revenues contributed by the several states as such in 1920 are as follows:

Alabama	51.3	Nebraska	6.6
Arizona	18.7	Nevada	26.6
Arkansas	23.7	New Hampshire	8.7
California	20.4	New Jersey	35.6
Colorado	9.0	New Mexico	17.6
Connecticut	12.3	New York	12.1
Delaware	35.3	North Carolina	30.1
Florida	7.2	North Dakota	12.1
Georgia	43.5	Ohio	7.3
Idaho	9.7	Oklahoma	7.5
Illinois	8.7	Oregon	4.8
Indiana	10.6	Pennsylvania	15.9
Iowa	1.5	Rhode Island	5.2
Kansas	2.3	South Carolina	15.8
Kentucky	37.1	South Dakota	16.6
Louisiana	24.5	Tennessee	17.8
Maine	35.6	Texas	54.0
Maryland	41.6	Utah	31.5
Massachusetts	12.3	Vermont	33.1
Michigan	17.1	Virginia	36.7
Minnesota	19.5	Washington	18.1
Mississippi	52.1	West Virginia	6.4
Missouri	11.9	Wisconsin	15.6
Montana	9.9	Wyoming	24.3

These figures show that only fourteen states, or less than one-third of them, pay as much as one-fourth of the cost of running their schools, and that one-half

of the states pay as little as one-sixth, some much less than that proportion. Moreover, statistical studies of school funds show that for a number of years the states' contributions to support have been relatively diminishing. This is largely due to the fact that districts have had from time to time to vote additional tax levies, while state tax rates, many of which are fixed in constitutions, are more inert, and state appropriations show a similar quality. There is now a tendency, however, if one may judge from legal provisions, toward larger state contribution. Or, from another point of view, many of the states are showing a disposition to "catch up."

States which have in very recent years appreciably increased their school tax rates or appropriations are Arizona, California, Delaware, Georgia, Louisiana, Maryland, Massachusetts, Mississippi, New York, Pennsylvania, Texas, Utah, Virginia, and Washington. The first-mentioned state provided state funds sufficient to produce $25 per capita of average attendance in the schools. California, by initiative act of 1920, added $30 per capita of average attendance to its distributive school fund, and the people of Utah in the same year ratified a constitutional amendment which provides a state fund of $25 a child of school age. Washington increased its state fund from $10 to $20 a child of school age. By an act of 1919 Georgia set aside for education one-half of the proceeds of the state tax, and Louisiana the following year adopted a constitutional amendment adding a one-mill state school levy. Virginia in 1918 raised its state tax from ten cents to fourteen cents on the hundred dollars, and Texas has in recent years added both to its tax and to its school appropriations. Other states which appreciably increased their state school funds generally effected such increases by means of appropriations. It should be noted that several of the states in this group, as Massachusetts, New York, Pennsylvania, Louisiana, Arizona, Utah, California, and Washington, effected their increases so recently that the full force of them is not seen in the figures given for 1920.

A REPLY

The article on "The Winnetka Social-Science Investigation" which appeared in the December number of the *Elementary School Journal* was criticized by Walter S. Monroe in the March issue of the *Elementary School Journal*. May we simply set the outstanding points of Monroe's criticism in juxtaposition with a few statements in the original article?

Monroe: If we admit that reading current periodical literature and noting the references to historical information is a legitimate method of determining the historical facts which should be taught, I, for one, am not prepared to accept it as being the only method of curriculum construction which should be applied to the field of history. Probably the authors of this article would agree with me, but they give no explicit indication of it, and the statements

referred to give one the impression that they believe it is the one and only method of determining the facts of history which should be taught in the elementary school.

Mohr and Washburne: We have thus determined by statistical study those items which must be known by all American people in order that they may read and converse intelligently. This is only one function of social-science teaching, and the curriculum we are preparing is only a segment of the complete social-science curriculum.

Monroe: I question the propriety of describing an investigation as "strictly scientific" in which the investigators do not maintain an open-mindedness to the probable limitations of their procedure.

Mohr and Washburne: A statement concerning the purposes of social-science teaching may not be out of place. One of the essential purposes is to train people, from their school days on, to apply the past experiences of the race to the solution of present-day social, political, and economic problems. . . . . Rugg and his associates at the Lincoln School of Teachers College are now engaged in a study which is bringing to light the information needed for the fulfillment of this purpose. A second aim of the history and geography courses is to acquaint the children with the facts that they are likely to meet in the everyday reading and conversation of their lives. [The Winnetka investigation has worked on these facts only]. . . . . A third purpose in social-science teaching, [is] that of enriching the play life of the children. Our study does not deal with this third purpose.

Monroe: It is not sufficient to collect facts. These facts must be used as the material of thought and with due regard to their limitations.

Mohr and Washburne: Before the actual writing of the curriculum material commenced, an important question arose, namely, What means exists of knowing just what facts about each item are common knowledge and, hence, should be taught? . . . . What stories are we to teach about each? What facts concerning them should we expect the children to retain? The answers to the problem are various. [Then follow several paragraphs discussing the development of a curriculum and analyzing the limitations of various methods.]

One is inclined to suspect that Mr. Monroe read the article he criticizes with more speed than comprehension.

LOUISE MOHR and CARLETON W. WASHBURNE

IMPROVING SMALL SCHOOL BUILDINGS

The Department of Education of the College of Agriculture of Cornell University has issued a pamphlet setting forth standards for small school buildings and weighting the standards so as to guide school officers and communities in selecting features of

construction with discrimination. The pamphlet was prepared by Professor Butterworth at the conclusion of the study of rural-school buildings which he made for the Rural School Survey of New York State. The importance of a careful consideration of the various aspects of the school building and the purposes of the pamphlet are described in the following introductory paragraphs.

According to the most reliable figures available, there are approximately 200,000 one-teacher school buildings in the United States. New York State alone has about 8,500.

The magnitude of these figures should stimulate reflection concerning the educational conditions that are likely to exist in such schools: the number of classes the teacher must handle each day; the limited curriculum; the lack of educational co-operation usually characteristic of small areas; the inadequacy of equipment, building, and grounds; and the limited wealth available for overcoming deficiencies. It is clear that reflection may lead to actual improvement, but only to the extent that specific facts regarding these different aspects are secured and presented to those concerned.

This bulletin is for the purpose of stimulating an interest in, and a more intelligent study of, one of these conditions affecting education—that of the small school building and its grounds. Herein are presented an analysis showing the more important features of a good rural-school plant; a method of recording, specifically and uniformly, facts regarding it; a set of standards as the basis for an interpretation of these facts; and a method by which the conditions in any particular building may be so presented as to convey a definite idea of its needs.

This material may be useful in various ways: in making surveys, where the purpose is to analyze the building conditions in a state, county, township, or community; to the rural-school administrator who desires to have at hand specific information concerning the buildings within his territory in order that he may use definite facts rather than vague generalizations in urging the improvement of school conditions; and for community self-education regarding the physical conditions under which children study. The writer considers this last function particularly important. Education can make genuine progress only as the leaders develop in the people a desire for, and at least a general notion of, what constitutes better schools. An objective problem such as the school building can be studied by trustees, parent-teachers' associations, or similar groups of alert school patrons. Even school children, particularly in the higher elementary grades, may be taught the need for sufficient and well-distributed heat, adequate ventilation, sufficient play facilities, a pure water supply, and the like. A study of such conditions may be made one unit of a course in civics if the teacher's goal is to train boys and girls to govern themselves more effectively.

SUMMER PROGRAMS FOR TEACHERS

The Board of Education of Hammond, Indiana, has adopted a plan of summer programs for teachers which aims to secure in a period of years the advantages of both study and recreation. The plan and its interpretation are described in the following official bulletin.

In order to promote professional improvement of all teachers, principals, and supervisors elected to positions in the Hammond city schools, a bonus of fifty dollars ($50) will be added to the annual salary of any teacher, principal, or supervisor provided the summer has been spent according to the following plan:

First summer.—Normal school, college, university, or approved special school attendance, receiving a maximum of five semester hours credit therefor. If fewer than five semester hours are credited, only ten dollars ($10) per semester hour will be granted. Provided: in counting summer attendance credits for correspondence or extension work done during the school year shall be included.

Second summer.—Same as first summer or travel of educational value covering at least six weeks. Statement of travel, places visited, time included, etc. shall be submitted to the board of education for approval before bonus is granted.

Third summer.—Rest or travel of educational value.

Fourth, fifth, sixth, etc., summers.—Repeat the foregoing plan of summer-school attendance, travel, and rest.

The plan is to begin with teachers who attended school during the summer of 1921, the first bonus for travel to be for the summer of 1922, the first bonus for rest to be for the summer of 1923, if taken in the order prescribed.

In order to make as clear as possible the application of the plan to individual cases the following interpretation is offered:

1. When shall the bonus be paid? The last check in June of each school year.

2. Shall it be paid to teachers who leave the school system before the school year is completed? No.

3. Shall it be paid to teachers at the close of their first year in the Hammond schools? Extension work during that year will be credited. Summer work previous to the beginning of that school year will not be credited.

4. Shall travel of less than six weeks be credited in proportion to time spent? Yes, if such travel is approved.

5. Shall travel during the school year be credited? No.

6. Shall work done during leave of absence be credited? Yes.

7. To whom shall it apply this year, ending June, 1923? To those who can qualify for (*a*) summer work in 1921, (*b*) extension or correspondence work during school year 1921–22, (*c*) summer work in 1922, (*d*) extension or corre-

spondence work during school year 1922–23, (e) travel in 1922, provided it followed study in 1921.

8. Shall travel or rest following extension or correspondence courses only be credited? No.

HEALTH EDUCATION

The Bureau of Education has recently issued the first of a series of School Health Studies. The Preface describes the formation of the National Child Health Council which is responsible for the series.

> The National Child Health Council came into being in March, 1920. The organizations which joined in forming it were the American Child Hygiene Association, the Child Health Organization of America, the National Child Labor Committee—whose work is distinctly for children—the American Red Cross, the National Organization for Public Health Nursing, and later the National Tuberculosis Association, whose work bears largely upon the health of children.
>
> Recognizing that there can be no sound mutual service if there is disagreement on fundamental policies, the council has attempted to provide a means for answering some of the pressing questions in the child health field. In order that it might not become a separate organization, expressing merely its own views, but might serve as a clearing-house, it organized certain advisory committees which are broadly representative of expert opinion and placed its machinery at their disposal. These committees include delegates from national organizations specializing in certain fields, and individuals of outstanding ability and knowledge in the same fields.

The publication is made up of seven sections or chapters dealing with such matters as health examinations, various forms of exercise, the preparation of teachers to give health training and instruction, the essentials of healthful school buildings, and so on.

Another publication which will be of interest to school officers in the same connection is a volume of eighty-eight pages published by the Department of Education of the city of Binghamton, New York, in which is described very fully the elaborate health program which is being carried on in that city. The book is illustrated by a series of health posters. It reproduces also all of the forms which are used in the course of the health examinations and reports. It describes the efforts which are being made in such matters as the improvement of the nutrition of the pupils and the supervision of their rest and exercise.

One very important and relatively uncommon feature of the school health program which is described in the Binghamton volume is the following:

> The required physical examination of the teacher may be made by either the school or the home physician. We are at present offering our teachers no free medical or dental treatment except emergency clinical service—medical and dental—and dental prophylaxis. We are able, however, to give some nursing assistance in special cases where the need is urgent and the services of a private nurse cannot be obtained.
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> The Department of Education and the Teachers' Association of Binghamton have co-operated in providing a social center for the teachers of the city—a tastefully furnished apartment used during school hours for Continuation School work. The rooms are equipped with many conveniences for social purposes and are open to the teachers evenings and holidays. The domestic science rooms and equipment in all school buildings have also been placed at the disposal of the teachers on Saturdays for sewing, pressing, cooking, etc.
>
> An increasingly great interest is shown by the educational authorities and an unusually active Teachers' Association in the welfare and recreational activities of the teaching staff. Social dancing, bowling, hiking, and other out-of-door sports have a place in the recreational program, while socials and outings participated in by practically the entire administrative supervisory, and teaching staff are frequently held. These social activities have been of the greatest value in promoting health, morale, and the finest spirit of goodwill.

TRAINING TEACHERS IN MANAGEMENT

The State Normal School of Albion, Idaho, has issued a booklet, prepared by John C. Werner, director of training, which gives in very compact and usable form suggestions to the students of the school who are engaged in practice-teaching. The publication is a handbook on principles of method and management.

Management is one of the most serious problems of the young teacher. In this booklet a number of concrete suggestions are brought together which are so useful and so typical of the whole book that they are quoted as follows:

> The teacher who is able to carry with her the spirit of work into the schoolroom, and who always has at hand an abundance of well-selected, well-organized, and suitable material for her children is most likely to be successful in her control of the room. It has often been said, and it is still just as true, that the unoccupied child is likely to be the trouble maker. If the teacher is resourceful enough to have all children engaged in suitable and interesting work,

discipline is likely to take care of itself. In the conduct of a day's school, there are many routine matters that must be attended to. Fortunate is the teacher who has so organized the routine of the day's procedure as not to be burdened with determining the procedure as matters come up during the day. The careful teacher will spend enough time so to organize such routine factors as to enable the children to form the habit of carrying them on in a sympathetic and orderly way, and thus reduce such matters to an orderly and systematic procedure. The wise teacher will study the psychology of the group with which she works. Knowing intimately the personal characteristics of the individual children in her room, she will avoid provoking children into disobedience, but rather will succeed in leading them to do the thing she desires, which they at the same time will desire to do. Following are some suggestive questions on the problem of management:

1. Is time lost in getting started?
2. Are pupils prompt in action and in response?
3. Is the recitation time somewhat equally distributed among all of the pupils?
4. Is the attention of the class held by intrinsic interest in the lesson?
5. Does the teacher discover and check all detrimental tendencies in their initial stages?
6. Does the teacher control and direct by positive suggestions?
7. Is the teacher kind and yet firm?
8. Is the teacher positive but not petulant?
9. Do the pupils respond with accuracy and brevity?
10. Are the pupils respectful and courteous?
11. Is the teacher too talkative?
12. Does the teacher do things which the pupils might have done?
13. Is time taken for doing things that should have been arranged before class?
14. Are all materials handled with efficiency and dispatch?
15. Does the teacher have a quiet, business-like, and dignified manner?
16. Does the work seem to lag, or is there always plenty to do?
17. Does the teacher have her work well planned beforehand?
18. Are the children all so busy with their work that there is no time for mischief?
19. Is the schoolroom tidy and well kept?
20. Do the teacher and pupils seem both busy and happy?

THE JUNIOR HIGH SCHOOL IN BALTIMORE

A bulletin issued by the public school system of Baltimore reports statistics to show how the organization of junior high schools in that city has affected the retention of pupils in the upper grades and in the high schools. The junior high schools have increased 41 per cent in net enrolment in two years. It is evident that these schools have superior powers of retention. During the same

period the attendance on the senior high schools has increased 25 per cent.

The character of the schools which have brought about these increases in enrolment is described in the following questions and answers quoted from the bulletin.

What is a junior high school? It is a school intermediate between the elementary and senior high schools and usually includes the pupils of the seventh, eighth, and ninth grades.

Do the junior high schools help to keep pupils in school for a greater number of years? By affording easier transition to senior high schools, they tend to diminish the gap between elementary and high schools, to provide better adjustment of the work to the pupils, and thereby to decrease elimination of pupils.

Do junior high schools provide an improved curriculum? A richer program of subjects is offered. Besides the usual academic subjects, there are foreign languages, general science, shop work (wood, sheet metal, electricity, elementary machine, etc.), mechanical drawing, cookery, housekeeping, sewing, dressmaking, commercial subjects, including typewriting, etc. The junior high school becomes a place in which pupils, by trying different kinds of work, may ascertain the type of activity for which they are best adapted.

How may the junior high school adjust work better to needs of pupils? Better provision for individual differences among pupils may be made. Different curricula (academic, commercial, and industrial) are offered to meet the varying needs and abilities of pupils. Pupils are grouped, as far as possible, according to ability, and the endeavor is made to adjust the work to the abilities of the pupils of the several groups.

PROBLEMS FOR SCIENTIFIC INVESTIGATION IN ELEMENTARY EDUCATION

WILLIAM S. GRAY
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The last ten years have witnessed noteworthy progress in the scientific study of elementary-school problems. Charters recorded the language errors of children and recommended significant changes in the course of study. Jones tabulated spelling vocabularies and emphasized the importance of drill on the words which pupils use in written exercises. Thorndike derived a handwriting scale which stimulated the organization of more than two hundred tests and scales for measuring the accomplishments of children. Horn and others made numerous studies of the methods of teaching spelling, which resulted in the improvement and refinement of the technique of teaching children to spell. Freeman made elaborate analyses of handwriting movements and described important differences between good and poor writers.

The conclusions reached in the investigations which were made led to radical changes in various phases of elementary education. It is significant, however, that little or no united effort was made along particular lines. Each investigator usually selected problems from the field of his particular interest. Consequently, the results of many valuable studies failed to modify practice because they were not reinforced by conclusions from other investigations carried on under similar conditions. In order to insure rapid progress in the reorganization of elementary education agencies are needed to stimulate the study of a wide variety of problems which await solution. Furthermore, there is urgent need of agencies to co-ordinate these studies sufficiently to insure thoroughness and progress along specific lines.

It is the purpose of the discussion which follows to describe briefly a number of problems which have been recommended recently for detailed investigation. I am indebted in this connec-

tion to a number of people[1] for very valuable suggestions. There are two motives for introducing these descriptions. The first is to provide a somewhat comprehensive view of significant problems which are challenging attention. The second motive is to call attention to the need of detailed analyses of elementary-school subjects. In the latter part of the discussion examples of recent analytical studies will be presented.

There are at least two agencies in the country recommending and participating in deliberate investigations of administrative units in public education. The purpose of these investigations is to define the various units and to secure co-ordination between them. As a significant step in the reorganization of the units it has been recommended that the eight-year elementary school be abandoned in favor of a six-year unit. School officers have been slow to adopt this suggestion. They are urging a series of investigations to secure convincing evidence of the advantages and limitations of each type of organization. Furthermore, careful studies are needed with reference to conditions in rural communities. It is not unlikely that the size of administrative units in regions of sparse population should differ from the size of the units in densely populated areas. Of still greater importance is the need of detailed studies of the content of the course of study of an eight-year school to determine how it can be reorganized to meet the needs of a six-year unit.

A second problem relates to the functional co-ordination of different administrative units. In the past, each unit has usually set up objectives of its own without careful consideration of the work which precedes or follows. For example, many kindergartens have given little attention to instruction which prepares definitely for specific problems or subjects in the first grade. Recent studies show clearly that five prerequisites for reading in the first grade can be provided to advantage in the kindergarten. They are (1) wide experience concerning the things about which the children will read, (2) facility in the use of ideas, (3) a fluent command of

[1] Leonard P. Ayres, J. H. Beveridge, B. R. Buckingham, C. E. Chadsey, F. N. Freeman, C. T. Gray, Ernest Horn, F. M. McMurry, W. S. Monroe, Margaret E. Noonan, R. M. Tryon, and Guy M. Whipple.

simple English sentences, (4) a relatively wide speaking vocabulary, and (5) a genuine desire to read. Investigations are needed to define clearly the functions and relationships of each unit. This involves a deliberate analysis of elementary-school subjects as well as investigations to determine the most appropriate period in which to emphasize each important phase of subject-matter, such as the mechanics of reading, the rate of silent reading, and the comprehension of what is read.

There are problems of internal organization in the elementary schools that are demanding careful consideration. With the introduction of intelligence tests, pupils have frequently been classified and segregated on the basis of their mental ages and intelligence quotients. Some superintendents have gone so far as to make the results of mental tests the sole basis of classification. On the other hand, recent experiments do not supply conclusive evidence of the validity of this method of classification. Investigations should be carried on vigorously to determine the most important facts which should be considered in classifying pupils at various levels in the elementary school. To the extent that pupil accomplishment in school subjects should be considered there is need of scientific studies of the objectives for each grade.

A second problem of internal organization relates to the value of departmental teaching. In some schools, complete departmentalization has been adopted; in other schools, the traditional type of grade organization is followed. Although investigations have been made of this problem, there is need of additional evidence of the advantages and disadvantages of each type of organization. Comparative studies of the progress of comparable groups of children should be made. If the departmental plan has distinct merit, to which subjects and grades do these advantages apply most specifically?

For purposes of economy, superintendents have materially increased the size of the classes. Careful studies should be made of the relation of the number of pupils in a class to the efficiency of instruction in different types of recitations. Records of the progress of classes of different size but of equal ability are needed. Furthermore, the cost of instruction per pupil should be determined.

Final conclusions in regard to the most desirable class unit can be reached only when a number of such investigations have been made under comparable conditions in a variety of situations.

In regard to the cost of education, Leonard P. Ayres offers the following suggestion:

> The time is rapidly approaching when the expense of supporting public education is going to eat up the incomes of our municipalities so that they will be unable to finance their other activities. The truth is that in America we have determined to give all people access to free public education until they are adults, but we have not thought of any way to pay for it. More research should be done in the planning of buildings and in their intensified use.

The recent report of the committee of the National Council of Education on needed changes in the elementary-school course emphasized the importance of revising and expanding the curriculum to adapt it to the needs of the present generation. Investigations should be undertaken in practically every content subject to determine the pupil experiences which should form the core of the elementary-school curriculum. The reorganization of the present course involves two steps: the elimination of useless material and the development of new materials of instruction to meet the needs of changed conditions.

A group of educators are interested in the extent to which local conditions should influence the curriculum of a particular school. The following is quoted from one report:

> We are planning a survey of the conditions in two or three schools, including pupils, environmental conditions, equipment, and the characteristics of individual teachers. Our plan is to begin with individual schools and to work upward by types in order to secure curricula for the various schools of a city or state.

A third tendency in curriculum-making is suggested by the following quotation:

> One of the most important problems of elementary education is the construction of suitable courses of study to meet the needs of pupils after they have been classified into sections on the basis of their ability.

In another report much concern is expressed over the recommendation that there should be a differentiation in content for gifted and slow children. This problem has been debated so

vigorously during the past year that the time is ripe for detailed studies of the effectiveness of various types of courses with different ability groups.

A fourth problem relating to curriculum matters grows out of a demand for fewer units of instruction each day in contrast with numerous recitations on different subjects. The proposed plan emphasizes the value of productive correlations; the traditional plan insures progressive sequence and constant growth in dealing with problems in a particular field. There is need of detailed analyses of the relationships existing between bodies of subject-matter and of deliberate experiments to determine the growth of pupils in knowledge, intellectual power, and skill when different principles are employed in organizing and presenting units of subject-matter.

The final series of investigations to be mentioned in this brief survey relates to the further development and refinement of general and specific tests. One writer is deeply concerned because many phases of instruction cannot be measured at the present time. He recommends that Bobbitt's curriculum studies be combined with investigations to determine accurately how far some of the important objectives can be attained.

A second writer who is interested in diagnostic studies suggests that the distinction between general and specific tests is in itself a real problem. Furthermore, measuring devices are needed to find out if pupils possess superior or inferior ability in particular lines. He says:

> We ought to know more fully than we do the relation between native abilities and those which are the product of training, interest, character traits, mental attitudes, etc. For example, when we find a pupil who is deficient in arithmetic, our first impulse is to assume that the pupil has an innate deficiency in that type of work. There is good evidence that in some cases the difficulty is not inherent; in other cases, perhaps it is. This whole problem is one which needs very careful investigation.

The discussion thus far has referred to twelve important problems for study. In practically every case detailed analyses of school subjects are essential. They are needed in determining the purpose and scope of different administrative units, in securing

co-ordination among these units, in determining a valid basis for the classification of pupils, in reorganizing courses of study to meet new and varied conditions, and in organizing tests and interpreting the results. Those who are trained to make scientific investigations either in the laboratory or in the classroom, have an unusual opportunity during the present period of reorganization to make genuine contributions by providing detailed, accurate information concerning the content of each subject and related habits, skills, attitudes, and abilities. In order to illustrate some of the opportunities in this connection, the remainder of the discussion will be devoted to descriptions of four steps which have been taken in the analysis of reading.

The first step in the analysis of reading began with a clear-cut distinction between oral reading and silent reading. By means of time-measurements, it was found that fluent readers read more rapidly silently than orally. It was shown later, by more detailed laboratory studies, why this is true. At the time these investigations began, instruction in reading was limited almost exclusively to oral exercises. In the course of time, evidence with regard to the distinction between oral reading and silent reading became so impressive that it could not be ignored. Consequently, the present-day reform in the teaching of reading was launched. Teachers began to study the differences between oral reading and silent reading which were evident in the classroom, and they planned specific exercises to secure progress in each type of reading. Book companies took advantage of this distinction and have already published a large number of so-called silent readers. Those interested in the measurement of pupil-accomplishment organized reading tests to measure progress both in oral reading and in silent reading. These examples indicate very clearly that an important distinction started a whole series of reforms.

The lesson which this incident in the history of reading teaches is that whenever there are fundamental differences in the mental processes of pupils, corresponding differences should be made in the methods of instruction. The duty of the scientist is to discover and describe these differences. The duty of the teacher is to plan methods of instruction which are based on the distinctions which

have been pointed out. Reform in any field of instruction may go forward very rapidly if scientists and teachers co-operate in discovering differences and in planning appropriate types of instruction.

A second step in the analysis of reading may be illustrated by the work of G. T. Buswell, who made a study of the fundamental habits in both oral reading and silent reading. The specific purpose of his investigation was to determine the stages of growth for three important elements of reading. These elements were the span of recognition of printed material, the rate of recognition regardless of the size of the unit, and the regularity or rhythmic progress of the perceptions along the printed line. The basic data were three primary characteristics of eye-movements: the average number of fixations per line, the average duration of the fixations, and the average number of regressive movements per line. These data were supplemented by records of the accomplishments of the pupils in comprehension and in oral reading.

It is not possible in this article to summarize in detail Buswell's investigation. Two examples will be given, however, in order to indicate briefly the character of the results. The first example relates to the development of the span of recognition in silent reading which is characterized by three definite tendencies.

> First, a very rapid growth during the first four school years; second, a plateau extending through the fifth, sixth, seventh, and freshman years; and, third, a second rise during the middle high-school years.[1]

In commenting on these facts, Buswell states that it is significant that the fourth grade marks the turning-point in the development of the span of recognition.

> The radical change in the curve of growth at the end of the fourth grade demands an explanation, either in terms of the element itself or in terms of the school reading situation. It is clear that the limit of growth in span of recognition has not been reached in the fourth grade.[2]

The second example relates to the causes of long fixations in reading.

[1] Guy Thomas Buswell, *Fundamental Reading Habits: A Study of Their Development*, p. 28. Supplementary Educational Monographs, No. 21. Chicago: Department of Education, University of Chicago, 1922.

[2] *Ibid.*

They occur chiefly in two kinds of situations. The first of these is when a particularly difficult word appears in the selection. At such points an excessive number of very long fixations generally appears. The mental process of the reader is engaged in an effort to analyze the word, during which the eye increases the duration of its fixations in order to give time for the reader to arrive at a final solution of the difficulty. A second type of situation in which very long fixations are found is on the occasion of a decided strain upon the mental process of interpretation. When the reader is in the attitude of intensive study there is a distinct tendency to increase the length of fixations. When a point is reached where a phrase is highly charged with meaning, the reader frequently holds his eye in a fixed position while he makes the required mental interpretation. There are, however, individual variations in meeting this type of situation, since some readers let their eye wander in an apparently aimless series of short fixations while they make the necessary thought adjustment.[1]

Buswell's study marks a distinct step forward in the scientific study of reading. It supplies teachers with a body of illuminating facts concerning fundamental reading habits. It shows clearly when these habits normally approach maturity in their development. It points out significant difficulties which children encounter in mastering certain habits. It raises important questions concerning current methods of reading instruction and points out desirable changes in teaching reading. There is need of accurate information of this type concerning each elementary-school subject. If the scientist can supply teachers with the results of detailed studies, it is fair to assume that reorganization and improvement of instruction will go forward rapidly along valid lines.

While group studies indicate the nature of normal progress from grade to grade, an examination of individual records reveals many cases of wide variation from the norm. There are thousands of boys and girls in elementary schools who make little or no progress in learning to read because of inaccuracies and disabilities which could be eliminated. These disabilities result in discouragement, retardation, and elimination in many cases. Society recognizes the fact that children differ widely in native endowment and learning capacity. It insists, however, that schools utilize every means possible to provide helpful instruction for each child. In this connection analytical studies are needed to determine the causes of specific difficulties.

[1] *Ibid.*, p. 52.

With these facts in mind, detailed studies[1] were made during the last two years of a large number of pupils who encountered unusual difficulties in learning to read. Records of their characteristics were secured through the use of intelligence tests, reading tests, and various exercises designed to secure information concerning the reading habits of children. In many cases photographic records of their eye-movements while reading were secured. An analysis of all of the data secured resulted in the recognition of five general classes of remedial cases. They were (*a*) pupils who had made little or no progress in learning to read, (*b*) pupils who encountered serious difficulty in interpretation, (*c*) pupils who encountered difficulties primarily in the mechanics of reading, (*d*) pupils who encountered difficulties in the rate of silent reading, and (*e*) pupils who were weak in two or more phases of reading.

After the types of difficulty had been defined, it was necessary to carry analysis farther in order to determine the causes of difficulty in particular cases. A list of significant causes of failure to understand what was read follows: (*a*) lack of training in intelligent interpretation, (*b*) failure to direct attention to the content, (*c*) inadequate or ineffective habits of thinking, (*d*) a narrow range of experience concerning the things referred to in the selections, (*e*) inadequate reading experience in certain types of selections, such as factual or problematic, (*f*) immature language habits which resulted in failure to grasp the meaning of many commonly used forms of expression, and (*g*) an overcultivated imagination which resulted in reading into passages things which were not there. In certain cases the causes of difficulty were much more technical in character. For example, some pupils failed to interpret what they read because they could not see the symbols clearly. This, in turn, was due to visual defects which could be corrected, to a low degree of visual acuity, to inadequate motor control of the eyes, or to temporary or permanent growths on the eyes. As soon as the character of the difficulty and its causes were determined, it was possible in most cases to secure improvement.

[1] William Scott Gray, with the co-operation of Delia Kibbe, Laura Lucas, and Lawrence William Miller, *Remedial Cases in Reading: Their Diagnosis and Treatment.* Supplementary Educational Monographs, No. 22. Chicago: Department of Education, University of Chicago, 1922. Pp. viii+208.

Coincident with the distinction between oral reading and silent reading and with the discovery of significant facts concerning fundamental reading habits and individual difficulties, there developed a need for still more detailed studies of different forms of silent reading. During the last two years C. H. Judd and G. T. Buswell made a series of investigations[1] of the adjustments which the reader makes when reading material of different types and when reading for different purposes. They also made a study of the distinction between analytical study and reading. The data which they secured show clearly that each form of reading is accompanied by mental processes which differ more or less from those which accompany other forms of reading. The distinction between reading and analytical study was especially emphasized. The next step in the improvement of reading instruction is to develop methods of teaching silent reading which take into consideration important differences in the mental processes involved in different forms and purposes of reading.

In conclusion I wish to emphasize once more the twofold value of detailed analyses of school subjects. They are of primary importance in the improvement of instruction in each branch of the curriculum. If investigations in a particular subject are carried on for a period of years, it is possible to gain a relatively clear insight into the more complex problems involved. As analysis proceeds, classroom methods become more accurate, precise, and effective. In the second place, the solution of many of the general problems which elementary schools face depends on accurate, detailed information concerning the subjects of instruction. Any recommendation which does not take such facts into consideration will probably have only temporary value. It is my firm conviction that the analytical study of school subjects is the most needed and also the most profitable field of investigation in elementary education.

[1] Charles Hubbard Judd and Guy Thomas Buswell, *Silent Reading: A Study of the Various Types*. Supplementary Educational Monographs, No. 23. Chicago: Department of Education, University of Chicago, 1922. Pp. xiv+160.

DUAL ADMINISTRATIVE CONTROL IN CITY SCHOOL SYSTEMS—A CASE STUDY OF ITS ORIGIN AND DEVELOPMENT. II

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1868–73

We have seen that previous to 1868 the board of education was, to quote from the president's section of the annual report for the year 1867–68, "practically a body without any power—a mere committee having the right to recommend measures to the city council but without authority to enforce them." With the passage of the act for the "support and regulation of public schools in the city of Cleveland," April 14, 1868, the council is shorn of most of its control over the schools and the board of education.

"All moneys . . . . levied for the current support and expenses of schools" are to be kept on deposit by the city treasurer and are not to be "paid over upon any other order or authority than that of the board of education," countersigned by the secretary and president of the board. The board of education is "constituted a body corporate capable of contracting and being contracted with, suing and being sued, receiving and conveying property for the use and benefit of the schools . . . . except . . . . in regard to the purchase of school house sites, the erection of school houses, and the investment of titles therein," in which matters the board must present its recommendations to the council. If the latter approve, "such sums of money as may be necessary to carry the same into effect" are to be deposited by them with the city treasurer "to the credit of the school construction fund," and the board of education proceeds to carry the recommendations into effect, drawing up "careful specifications," advertising for proposals, and awarding the contract "to the lowest responsible bidder," provided all contracts "shall be made in the name of the city of Cleveland, and shall not take effect until approved by the city council."

In addition to the secretary of the board and the superintendent of instruction, a third executive officer is provided by the law of 1868—a superintendent or "overseer of school buildings," whose duty it is "under the direction of the board to superintend the erection, enlargement and repairs of school buildings, to see that all buildings occupied for school purposes, together with the appurtenances thereof, are kept in good order and repair." It is significant of a none too definite delimitation of the duties and responsibilities of the board and its immediate executive officers that the secretary is still required "by frequent visits and in all other suitable ways," to "cultivate a practical acquaintance with the schools and teachers and promptly present to the board any matter requiring its attention;" that the superintendent is required to "inspect the school buildings" and report the condition thereof to the board; that the annual reports of this period contain, in addition to the reports of the secretary and the superintendent, a report of the president of the board in which he discusses such topics as school finance, new school buildings, the school population, salaries of teachers, textbooks, the course of study in the high schools, the new office of "supervising principal," the work of the public library, new school legislation, etc.

One gets the general impression, as the determination of matters relating to the schools is gradually transferred from the city council to the board of education, that most administrative decisions, as well as all questions of policy, rest directly with the board. In this connection the large number of standing committees is suggestive. During the year 1869–70 there were fifteen different standing committees as follows: finance, repairs and supplies, buildings, claims, teachers, salaries, texts and courses of study, music, boundaries, discipline, library, rules and regulations, printing, Central High School, and West High School. In four years the number had increased to eighteen.

1873–92

With the passage of the state law of May 1, 1873, the city council ceases to have any voice whatever in the affairs of the board of education and the public school system of the city district of Cleve-

land. Henceforth the board of education derives its powers directly from the state, has its duties defined in detail by state legislation, and is completely independent of every form of municipal control.

The board continues to be elected by wards biennially, one member from each, and hence has a membership ranging in number during this period (1873–92) from eighteen to twenty-six. Among the more significant duties and powers of the board specifically mentioned in the law of 1873 are the following: The board shall establish schools for the free education of youth of school age and may establish schools of higher grade and also a suitable number of evening schools. It shall determine the studies to be pursued and the textbooks to be used. It has full control of the administration of schools with power to appoint and fix the salaries of clerk of the board, superintendent, assistant superintendent, superintendent of buildings, teachers, janitors, and other employees (the city treasurer is ex-officio treasurer of the school funds of the district). It is empowered to purchase school sites, to build, enlarge, repair, etc. suitable schoolrooms, a detailed procedure being specified when the cost exceeds $1,500. It is authorized to issue bonds to obtain or improve public school property and to certify to the county auditor the amount of money necessary for school purposes, not exceeding 7 mills on the dollar, who shall assess the same on the taxable property of the district to be collected by the county treasurer at the same time and in the same manner as state and county taxes are collected.

The chief executive officers of the board are the clerk or secretary, the superintendent of instruction, and the superintendent of buildings. In this period the clerk ceases to be a member of the board and becomes, like the other two officers, a salaried official chosen from without the membership of the board. His chief duties are, briefly, to give notice of meetings to the board and its committees, to attend all sessions of the board, to prepare the business docket of the meetings and keep accurate record of all business transacted, to assume charge of all payments of money involving the drawing of warrants upon the city treasurer for the amounts due, etc. The superintendent of instruction is the "executive officer of the board in all matters pertaining to instruction." He is to "supervise the

business of instruction in all the schools of the city, ... to prepare blanks and prescribe rules for reports, ... to inspect school buildings and report the condition thereof," to keep the board advised "in regard to the school systems of other cities," to "make a report of the schools, for publication with the report of the president and clerk of the board," to report teachers absent from the "teachers' institute," "to call teachers' meetings, to fill temporary vacancies," and "to fix the time, mode and standards of examinations" of pupils, etc.

The annual reports of this period point clearly to the fact that the board of education continues to be an administrative as well as a legislative body. The number of committees ranges from eighteen to twenty-three. The following are typical administrative duties required of these committees:[1] (1) Committee on boundaries: "All applications for the transfer of a scholar to any public school out of his or her district, shall be made or referred to the committee on boundaries." The committee has power to act in four specified cases. All others must be referred to the board. (2) Committee on claims: It is the "duty of the committee on claims and auditing to examine monthly and oftener if required every bill and claim presented to the board for payment." (3) Committee on salaries: "They shall monthly hold a meeting to consider the payroll, excuses of teachers for absence, tardiness, etc. . . . . It shall be their duty to certify to the monthly payroll and the same shall not be ordered paid until thus certified." (4) Committee on teachers: "Shall visit schools as frequently as possible that they may be enabled to judge of the qualifications of teachers, and counsel the superintendent to the best possible advantage in the discharge of his duties. . . . . At the first regular meeting of the board in June they shall submit the names of teachers who may have been nominated for reappointment."

In the annual reports the president of the board feels free to make recommendations which today we would think of as coming most properly from the superintendent of schools. An excellent example of this is found in the president's portion of the annual

[1] *Forty-fourth Annual Report of the Board of Education* (1879–80), p. 219. The population of Cleveland at this date was 160,146.

report for year 1882–83 in which he calls attention to the comparatively high cost of instruction in the high schools, notes that 95.2 per cent of the children never enter high school, and that less than 1 per cent graduate therefrom, while those who do graduate are deficient in an ordinary English education, and concludes that "the folly of continuing such a system must be apparent to all." He urges the abolition of the last two years of the course, leaving the "D and C years" only as "a continuation of the grammar course thus making a ten-year course of purely English or English-grammar education." He insists that they must return "to the primary object of public school education and no longer attempt to run preparatory schools for colleges at the expense of the general public."[1]

Members of the board are at times conscious of the fact that with the gradual assumption by the board of complete control over the public schools there has not been a corresponding delegation of administrative duties. This is well illustrated by certain comments of the president of the board in the annual report for 1884–85. He refers to the "two general classes of subjects on which the board is called to legislate: the strictly business side and the educational side of the public schools." He then adds that the "board's methods of doing business are still those that grew up when Cleveland was a small city. . . . . The great vice of these methods is the vast amount of detailed and petty work that they throw directly upon the board. . . . . New methods should be devised whereby the details that now come to the board shall be handled by the committees."[2] He is not yet prepared to say that these "details," mostly of an administrative nature, should "be handled" by the executive officers of the board. These latter are thought of as executive officers rather than as administrative officers of the board of education. The board is still essentially "The Board of Managers of Common Schools in the city of Cleveland."

1892–1905

The "act to provide for the reorganization of boards of education in the city districts of the second grade of the first class" passed

[1] *Forty-seventh Annual Report of the Board of Education* (1882–83), p. 18.

[2] *Forty-ninth Annual Report of the Board of Education* (1884–85), p. 17.

March 8, 1892, introduced a type of school organization and management of such interest to the county at large that two years later it was in its essential features recommended as the most desirable form of school organization for large cities by the Subcommittee on the Reorganization of City School Systems of the National Educational Association.[1]

By this act the board of education is made to "consist of a school council and a school director." The act definitely recognizes a legislative branch and an executive branch in the school organization. "The legislative power and authority" are "vested in the school council," consisting of seven members elected at large for a term of two years and receiving "an annual salary of two hundred and sixty ($260) dollars." The executive power is vested in the "school director . . . . elected by the qualified electors of the district" for a term of two years and receiving "an annual salary of five thousand ($5,000) dollars."

Among the more important "powers vested in the school council" are the following: "To provide for the appointment of all necessary teachers and employees and prescribe their duties and fix their compensation; . . . . to provide for the teaching of any brand of instruction by prescribing the duties of the teachers and by the change or adoption of any textbook"; to "provide for the purchase of lands for school sites and the erection of school buildings"; to levy taxes, provided, however, that "no resolution levying a tax shall be adopted unless the resolution, together with the estimates on which the same is based, has been submitted to, and approved by the Board of Tax Commissioners in the city located in full or in part in such districts."

The executive department of the board of education in the person of the school director is given veto power over certain resolutions of the school council as follows: "Every resolution involving an expenditure of money or the approval of a contract for the payment of money, or for the purchase, sale, lease, or transfer of property, or levying any tax or for the change or adoption of any textbook, shall before it takes effect, be presented, duly certified

[1] *Journal of Proceedings and Addresses of the National Educational Association* (1894), p. 375.

by the clerk, to the school director for approval. The director, if he approves such resolution, shall sign it; but if he does not approve it he shall return the same to the council at its next meeting with his objections, which objections the council shall cause to be entered upon its journal; and if he does not return the same within the time above limited, it shall take effect in the same manner as if he had signed it. . . . . When the director refuses to sign any such resolution or part thereof, and returns it to the council with his objections, the council shall forthwith proceed to reconsider it; and if the same is approved by a vote of two-thirds of all the members elected to the council it shall then take effect as if it had received the signature of the director."

Of the school director, it is stated in general that "all powers heretofore vested in and performed by the board of education . . . . shall be vested in and performed by him." He is "the executive officer of the board" and "must attend all meetings of the council." He "may take part in its deliberations but has no right to vote." He "shall, subject to the approval of and confirmation by the council, appoint a superintendent of instruction, who shall remain in office during good behavior, and the school director may at any time for sufficient cause remove him. . . . With the exception of the assistants to the superintendent and teachers, all employees of the board of education are appointed or employed by the school director. All contracts involving more than $250 in amount shall be in writing, executed in the name of the board of education by the school director and approved by the council." Contracts and purchases not exceeding $250 at any one time are made by the director without the approval of the council. The procedure for contracts and purchases exceeding $1,500 is given in ten detailed steps. The school director "has authority to accept or reject all bids, approves the purchase of all supplies, determines the fitness and competency of employees, and is charged with the impartial and efficient execution of all general or special laws, rules and regulations governing the board of education."

By the act of 1892 the city treasurer is ex-officio treasurer of the board of education, and the city auditor is the auditor of the board. In the latter's office all accounts are kept showing receipts, disburse-

ments, assets, and liabilities of the board. "All warrants, however, for the payment of money from the school funds must be approved by the school director."

The superintendent of instruction continues to be essentially a supervisor of instruction, his one important administrative responsibility being the "power to appoint and discharge all assistants and teachers." Appointed by the school director and required to report to him "in writing annually as to all matters under his supervision," his success as superintendent of the instructional work of the schools is at all times dependent on the support of the school director. Having this, at least during the first years of this period, the superintendent is found instituting a general reorganization of the schools, "enlarging the responsibility of the principals," striving to eliminate personal and political influence in the appointment of teachers, "energizing the teaching force" through regular round-table meetings, reading circles, and extension lectures, discontinuing promotion in the grades on the basis of annual examinations, revising the courses of study and introducing newer types of classroom activity, recommending the inclusion of kindergarten work in the school system, etc.

In any appraisal of the foregoing scheme of organization it will at once be granted that a most serious defect is the choice of the chief executive officer of the schools by popular vote. What might be expected, in theory, to happen, actually did happen in 1900 when the school director, a candidate for re-election, with an apparently good record, was defeated, at least in part, by incidents following the attempted dismissal of two students from the Normal Training School. The superintendent of instruction thereupon resigned, feeling that the new school director would give him scant support. We thus have the spectacle of an incident in a single school instrumental in electing a school director and a superintendent of instruction.

Further, both as a result of this method of choosing the school director and as a result of the predominating importance attached to the business management of the schools ever since the appointment of the first acting manager in 1841, the person chosen to fill the position of chief executive is apt to be selected primarily because

of his general business reputation in the community rather than because of his ability to formulate and put into execution desirable educational policies. The school director himself frequently implies this in his portion of the annual reports, as when he says, "I trust *I may be pardoned* for holding and expressing ideas touching the subject of instruction in the schools, which is the real and only work for which they are maintained."[1] And yet it is the school director who feels that "a different system of discipline from that in vogue in the Cleveland schools" is demanded and seeks a superintendent of instruction with this in mind. It is he who opposes the appropriation from the "present revenue for building purposes . . . . of a single dollar for building high schools" on the ground that "our first duty . . . . is to the elementary schools."[2] It is he whose approval of the resolution establishing kindergartens results in the addition of this activity to the Cleveland public schools. It is he who urges that "the high school courses should be extended and enlarged in the scientific, the mechanical and the business department." And it is he who must approve requisitions for all purchase of supplies, materials, etc., desired in any department—which supplies may condition very appreciably the instructional activities and educational policies of the school system.

1905–15

The present organization of the board of education and its executive officers dates in its essential features from the school code adopted by the state legislature April 25, 1904. This code leaves to the then existing board the decision, within limits, as to the number that shall constitute the new board of education after January 1, 1905. The number was by them fixed at seven, five to be elected at large and two by districts, later changed so that now all are elected at large and hold office for a term of four years.

According to the new code, the board of education "*may* elect a director of schools" to serve as such for a term of two years at a compensation "not exceeding $5,000 per annum." The duties of this officer are essentially the same as those exercised by the school

[1] *Fifty-eighth Annual Report of the Board of Education* (1893–94), p. 22.

[2] *Sixty-first Annual Report of the Board of Education* (1896–97), p. 22.

director of the preceding period except that he does not appoint the superintendent of instruction or approve the payrolls of teachers, etc. Apparently it is only by degrees that the director of schools ceases to be thought of as the chief executive officer of the board. Although the law does not formally require a yearly report, the "Annual Message of the Director of Schools" continues to appear in the annual report of the board of education, introduced with such statements as "Custom if not law, provides that the director of schools shall report annually to the board of education upon the work of his department." Until 1918 the department over which the director has charge is labeled the executive department. Since then it has been known as the business department. As business manager of the schools, the director has charge of the construction and maintenance of school buildings, the financial accounts of the board, the purchase of all materials and supplies, including so-called educational supplies, appoints and dismisses, subject to the approval of the board, all non-teaching employees, and in general is the executive officer of the board in practically all business matters.

By the school code of 1904 the board of education *is required* to "appoint a suitable person to act as superintendent of the public schools," known hereafter, not as the superintendent of instruction, but as the superintendent of schools. The superintendent may, subject to the approval of the board, appoint all teaching employees, "shall visit the schools under his charge; direct and assist teachers in the performance of their duties, classify and control the promotion of pupils," and in general act as the executive officer of the board in so-called "educational" matters.

CONCLUSION

With the preceding historical sketch in mind, we may note in conclusion certain observations made by the Cleveland Education Survey of 1915 in the volume entitled *School Organization and Administration*. Starting with the thesis that "boards of education exist for the purpose of getting public schools managed, not for the purpose of managing the schools themselves," the author urges that "the efforts of the members of the board in behalf of the schools

are not nearly so effective as they would be if it were possible for them to devote more time to the careful consideration of educational problems and to presenting these problems to the public, and less time to the routine transactions of the business details." He presents data showing that the board of education "does not and cannot concern itself mainly with policies in its meetings because it is too busy." "The main business of its formal sessions at the present time" (1915), he says, "is to authorize the director of schools to make some purchases or take some action and to confirm him for having done it. The next biggest business is to confirm the appointments and resignations of teachers. The next biggest business is to vote unanimously to pay bills that it has authorized." He further shows that "among nearly 2,000 items of business transacted in 1915, only about one-eighth can truly be termed 'educational matters,'" and that of these latter only about one-third "pertain to questions of policy," while the remainder are routine or administrative in nature. In short, he finds that "it is the board that really manages the schools."[1]

What, we may ask, is the cause of this situation? Is it because only the board of education is sufficiently able and honest of purpose to act as general manager of the Cleveland school system, it being impossible to find any *one* man with the ability to act in such capacity? Is it because during the period when the school director was elected by popular vote an "elderly and unaggressive" superintendent was appointed by him with the result that "the board took over little by little many of the details of the superintendent's work, reached decisions for him, and generally relieved him of the more burdensome duties of his office"? Is it because the state laws relating to public schools have become so numerous and so detailed as to render the situation inevitable? The act of 1836 contained six sections only bearing upon the work and conduct of the public schools of Cleveland. The Ohio school code of 1915 contains over four hundred such sections. Or, is the chief cause to be found in the history that has just been traced—where we have seen that the first board of education was in name as well as in fact a "board of

[1] Leonard P. Ayres, *School Organization and Administration*, pp. 15, 42, 43, 49. Cleveland: Cleveland Foundation, 1916.

managers"; that only gradually, indeed, did it secure complete management of the schools; that, having secured complete management of the schools, its president, conscious of the burden of administrative details, might recommend more delegation of such management to committees of the board but not to the executive officers of the board; that the primary concern of the board, certainly in fact if not in theory, was the business management of the schools, a business manager having been provided twelve years before it was deemed necessary to have an instructional manager; that the superintendent, until 1905 both in fact and in name was a superintendent of instruction only, held responsible for the supervision of instruction rather than for general educational leadership, in which supervision he was for many years assisted by the board of education and committees of citizens nominated or appointed by the board; that the one attempt to secure unified educational leadership by designating the school council as the "legislative department" and the school director as head of the "executive department" could scarcely be expected to succeed when the director was elected by popular vote and was therefore a citizen of the district with a following on election day dependent at its best on his general business reputation in the community, at its worst on his stand in regard to the dismissal of a student from the Normal School? At no time in the history of the Cleveland schools have all of the reins of administration been placed in the hands of one individual, chosen because of proved ability as an organizer and leader in public school education and held responsible for the conduct of all matters "educational" and "business" involved in the work of public school education.

MOTION PICTURES IN THE PUBLIC SCHOOLS

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Not long ago, at the book counter of a department store, I overheard a boy and his mother discussing possible purchases. She held up a book for him to see. "Why, of course, you can buy a book, Eddie, if you want to. See, here's a good one. It's Mary Pickford." Eddie, after one scornful glance, replied, "No, that's old stuff, Ma. Why, Mary must have put that out as much as three months ago." The book his mother was holding up was *Tess of the Storm Country.* Mother agreed that the book was out of date, and the search continued. Again, mother picked up a book. "Look, here's Wesley Barry." "Aw! gee! mother, buy me that. He only put that one out last week." The mother purchased the book, and they bore it off in triumph. It was Booth Tarkington's *Penrod.*

The motion picture is evidently already at work as an effective educational tool. It seems worth while, therefore, to attempt a brief survey of conditions in the motion-picture field for the benefit of educators who plan to venture there and hope to influence its development.

The outstanding and impressive characteristic of the motion-picture industry is its constant shift and change. Literally hundreds of firms are incorporated every year. Many of them have just enough money to produce a single picture. If the picture is a financial success, they make another; if it fails, all of the money is lost, and the firm goes bankrupt. Since the money is secured often from small investors—teachers, ministers, and the like—its loss involves suffering and bitterness. These "shoe-string" enterprises are so common that they cause no comment. They are apparently regarded as normal business phenomena.

People change constantly from one firm to another. A friend of mine in one of the big companies said the other day, "Why, I am

one of the old pioneers over here. I must have been with this company all of five years." Five years is a long time in the motion-picture industry. In searching for people who have tried to make school pictures, it will be found that they have scattered to the four winds. Gradually we can compile a list of firms which have organized for the purpose of making pedagogic pictures. In most cases we shall find that the firms are no longer in existence; the people who carried on the work are engaged elsewhere; and the early records are either destroyed or packed away in inaccessible places. Short as has been the period involved, the gathering of the history of pedagogic films will be a difficult task.

It is necessary to understand that the production of a motion picture calls for a large amount of capital. A thousand feet of film can be shown in a little less than fifteen minutes. If it is extremely simple material, it will cost from $1,000 to $2,000 to prepare. The big features shown in the theaters often cost twenty times as much. Suppose that a firm wishes to produce a series of forty lessons on civics, enough, that is, to supply one civics lesson a week throughout the year. That simple series of film lessons will cost close to $100,000. The company which makes $100,000 worth of film has been at work for about a year and has used up a lot of capital; yet all it has to offer when the work is finished is material for one grade on one subject to be shown once a week for fifteen minutes.

The school man who is planning to use motion pictures and adopts the usual auditorium method, with its permanent installation, its special wiring, its fireproof booth, and its safety exits, must himself make an initial outlay of several thousand dollars before he can use any pictures at all. He is not going to spend large amounts of money in new installation until he can be assured of plenty of teaching material to warrant it. He goes to the producer of civics films and says, "It will cost me $5,000 to get ready to show pictures; how extensive a motion-picture service can I count on?" The producer is forced to answer, "All I can let you have is one fifteen-minute lesson a week for one grade." Then comes a deadlock; the producer cannot make more pictures until he rents the ones he has, and the school man will not start using pictures until he can be assured of an adequate supply. The result

of such situations is that many firms have been organized to make instructional films. Many films have been produced, but they have failed to circulate because there have not been at any one time enough such films handled by any one person to provide proper service to the schools which might use them.

It is true that most of these films are not well adapted to school use. They are prepared either by showmen, who seek to amuse the children, or by college professors, who seek to lecture the children. Very few of the so-called educational films have been prepared by practical school people. From the teaching point of view, most films are poor. Personally, I do not think that this fact can be held accountable for the lack of films in the schools. Even poor films would be used gladly, I think, and the quality of the films would rapidly be improved, if the school people were able to get hold of them. The difficulty of securing the production of films in quantity and their fluid distribution to the schools at the places and at the times when they are needed, seems to me to be the big problem in the educational motion-picture field.

In the industry as a whole, as well as in the non-theatrical branch, the greatest problems arise through the question of distribution. It may be said—not exactly enough for an official report but with sufficient accuracy for our own early thinking—that there are about a hundred large producing companies and from fifteen to twenty thousand commercial theaters using films. Between the producers and the exhibitors there are perhaps ten or twelve national exchanges. The financial success of a film at present depends largely on its meeting the approval of the ten or twelve committees at the heads of the exchanges. The distributors, apparently, are the men in real power in the industry. Educationally, this means that the only existing official mechanism for the distribution of school films is in the hands of ten or twelve committees of distributors. Either the distribution of non-theatrical films must be carried on through this channel, or a separate outside mechanism must be built up.

The distribution of films involves a technique much more difficult than laymen are apt to realize. A film pays its way from rentals. Even when the film is shown in the immediate radius of the exchange,

its maximum use is one-third of the time, since for each day's use one day must be spent going and one day returning. Where the exchange is at a considerable distance, or where the users of the film are slow in shipping it, the rental income is seriously diminished. An exchange to be self-supporting must have on its shelves several times as many films as are ever in circulation at one time. If the number of users is small, the exchange will inevitably fail. It must have a wide circulation and keep its films constantly moving if it is to pay expenses.

Moreover, so long as non-acetate films are used, the fire risk will be great. Films must be kept in fireproof vaults and handled with exceeding care. The fire marshals' rules in most states are stringent, and penalties for laxity are severe. The work is not that for amateurs. In addition, films must be inspected and repaired after each return to the exchange. Many times they come back in bad condition due to careless handling. The proper repairing of films may save the company many thousands of dollars, which, again, is no job for amateurs. Plans have been suggested in which colleges and universities are to become the distributing centers for the school districts near them. Some such plan may be eventually adopted, but it is well to realize at the start that the work of the film exchange calls for much technical skill and training. It is not a task to be lightly undertaken.

On one point, however, the commercial exchange is genuinely remiss. It does not take the non-theatrical demand seriously. In some places exchanges—usually at the urging of the local theatrical exhibitors—actually refuse to rent films to schools or churches. This is because the theater men fear competition. Their fear is usually unfounded, but there have been cases where school people or church people have frankly started opposition theaters of their own with the avowed intention of running the commercial exhibitors out of business. Every such case makes trouble for the non-theatrical users in that locality. It should not be difficult to secure the good-will of the theater owners if the church and school people make clear their own determination to play fair. The producer is dependent on the good-will of the exhibitor who uses his films. Some, at least, of the producers are willing to encourage the non-

theatrical trade and urge the distributors to supply films if they can. It is necessary that the non-theatrical people help by avoiding overt antagonism toward theatrical exhibitors.

One constantly recurring complaint is that the exchange people do not know what the non-theatrical users wish. They do not talk the non-theatrical language, and they are not interested in the non-theatrical needs. It would seem desirable for distributors to employ non-theatrical salesmen in their more important exchanges for the express purpose of serving the non-theatrical demand.

The use of motion pictures for teaching purposes is still so new that practically no principles have as yet been formulated. There seem to be two different theories concerning where the films should be used. In some schools use is confined to the auditorium. Several grades are shown the pictures at one time. The pictures are projected from a stationary machine inclosed in a fireproof booth. One teacher takes charge of the auditorium period and usually gives a short lecture about the film either before or after it is shown. Apparently, the film is used as a supplement to the more thorough work of the classroom. More rarely a portable machine is taken from one room to another. The film is shown on a small screen to the regular class group of thirty or forty pupils. In such cases the teacher leads the class discussion before and after the film is shown and regards the film as the real basis or core of her lesson.

There is little uniformity about methods of projection. In some schools skilled operators are employed who are usually members of the union and must be paid regular union wages. In other cases the operator is a teacher or even one of the older boys. It should be noted that a poor operator not merely spoils the effect of the picture, but is apt to destroy valuable films. Films are fragile. The exchange might well be pardoned if it should refuse to rent films unless assured that a skilled operator would be in charge.

Where discussion occurs in connection with the film, it is usually planned by the local teacher. A few films are sent out with printed discussion leaflets, but usually no suggestions are given. The teacher is left to use the film in any way she can, and that must mean that most film lessons are poorly given.

The problems which educators in the motion-picture field must face may be summarized under three heads: production, distribution, and use. Before progress can be made along any one of these lines, educators and producers must arrive at a common understanding. There are inherited traditions which must be exploded. Producers must learn, for example, and some of the educators, too, that the classroom film does not need to be funny; it does not need to be clever; it does not need to tell a story.

In one of the early pedagogic motion pictures there was an arithmetic film which taught multiplication by showing hoards of brownies struggling along, each with a digit clasped in his arms. The brownies leaped from spot to spot. They juggled the figures and performed all sorts of amusing stunts. The producer of that film did not realize that it taught, not multiplication, but brownies. If the film were effective, the effect would be unfortunate, for it would be a bad thing if, when a child wanted to remember the answer to nine times nine, he were obliged to remember the grouping and line of formation of eighty-one brownies. Any scheme which, seeking to amuse and interest the child, actually diverts his attention or inserts extraneous elements in the habit to be formed is unpedagogical. Films of that sort may be funny and clever and may entertain the children, but they cannot be satisfactory classroom films. It is this sort of thing which the producers must learn from the educators.

On the other hand, there is much which the educators must learn from the producers. They must learn, for example, that their request for a "simple animated drawing showing the working of the automobile fuel feed system" involves two weeks or more of the most painstaking and difficult photography for a film which can be shown on a screen in three or four minutes. They must learn that it is far easier and less expensive to analyze the motions involved in the running high jump than to analyze the workings of a locomotive whistle; that the direction, "surface of map gradually changes from white through deeper and deeper shades until it becomes solid black," is not as simple as it sounds; and that to show a toad shedding his skin depends, in the first place, on the ability of the producer to secure the co-operation of the toad.

Once having established this basis for mutual understanding, the producers and educators will be in a position to undertake constructive work along the three lines indicated in this article. It should be possible to make constructive suggestions as to the films which the producers have in their vaults at the present time and are willing to release for non-theatrical distribution. The quickest way to secure classroom pictures would seem to be to start schools using at once whatever pictures now exist, to improve the quality of those pictures through editing and titling as fast as possible, and at the same time to stimulate the production of new films. Once the trade is built up and the demand becomes organized and intelligent, new pictures will be made to meet it. In the meantime, existing pictures can be utilized to build up that trade and to organize that demand.

In the second place, the distribution of school pictures must be greatly improved. The educators should be able, after they have had time to study the problem, to give suggestions to the exchanges, or to the producers who control their own exchanges, showing how the machinery may be adapted to meet the non-theatrical needs. Again, there is need for information and recommendations to the school people concerning the circulation of films within the system. Such problems as auditorium *vs.* classroom use, utilization of films in series and co-ordination with the course of study, the Los Angeles plan of combining the duties of projection man and supervisor, and so on, might be studied and reported upon, so that school people would have at hand suggestions for the effective circulation of films.

In the third place, it seems to me that educators are faced with, and must at some time answer, large series of questions concerning the use of the motion picture as a teaching device. Such questions as the function of the written word in the motion picture, the proper length of film, the number of points which can be presented, the type of discussion which should accompany the film, the time when that discussion should occur, and so on indefinitely, must be answered some time and, it seems to me, should be answered and could be answered in the near future through a series of comparatively simple experiments.

THE SCHOOL TREATMENT OF MENTALLY EXCEPTIONAL CHILDREN

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The attempt to measure the intelligence of school children has attracted a great deal of attention to those who appear to be exceptional with respect to general mental capacity. Since on a scale of individual differences the cases at the two extremes suffer the greatest handicaps in the school, interest has centered on the problems of the bright child and the dull child. In this article five methods of school treatment will be described briefly, following which some of the fundamental issues involved will be considered.

The first, or traditional, method of dealing with exceptional children has been frequently described as one of neglect. However, this neglect has resulted in the acceptance of a plan which, in essence, sets up a standard amount of required work; fails and retards the duller pupils who cannot reach this standard in the given time; and, by allowing them to skip a grade, occasionally accelerates a very few of the brighter pupils who show pronounced ability to meet the requirements of the school. At the high-school level the same plan is continued for the dull, while acceleration by carrying extra work takes the place of grade-skipping for the bright. It should be noted that this is essentially a rate-of-progress adjustment, the character of the curriculum being essentially the same for all children.

A second method of treatment is illustrated in the Dalton and the Winnetka systems. This method is designed, not especially for the bright or for the dull, but rather for all grades of individual differences. Such an "individual system" involves, first, a detailed statement of the curriculum in terms of definite unit assignments which can be readily interpreted by the pupil; second, an opportunity for individual progress at varying rates of speed, a new assignment being given only when the old one is satisfactorily

completed; and, third, promotion to a higher grade whenever the work of a given grade is finished. This makes possible rapid advancement for the bright and slower progress for the dull. There are no failures in the ordinary meaning of the term, the pupil being required to work on each assignment until it is mastered. There is a possibility, with such an individual system, of modifying the general character of the curriculum as well as the rate of progress, thus providing definite variations in assignments to meet the ability of all types of pupils. However, as far as the writer has been able to learn, at the present time such definite modification of lesson assignments has seldom been attained as an accomplished fact. It is pertinent to point out that the essential character of an individual plan of school treatment which maintains a single standard curriculum, varied only in regard to the rate of accomplishment, is very different from the character of such a plan which makes a genuine modification in content as well as in rate. The principal characteristic of the individual plan, as far as it relates to the topic of this article, is that it makes possible a rate of progress which is compatible with the mental capacity of both the bright and the dull.

A third method of treating exceptional children is to segregate them into special classes of various types. Special classes for subnormal pupils have been common for many years. More recently the plan has been applied to the bright group. The extreme degree of variation in the use of this method makes it difficult to select typical examples. Some of the special classes are mainly adjustment rooms, receiving pupils who are out of adjustment with the regular school classes and, by special treatment, making it possible for them to get back into the regular organization. Through the special help given, it is frequently possible for a dull child to catch up with his grade or for a bright child to forge ahead and skip a grade. Other types of special classes hold the pupils together as a permanent unit, in most cases progressing at either a slower or a more rapid rate than the regular school grades. The feasibility of this form of organization depends considerably on the size of the school system, the smaller systems finding it an expensive type of provision. Whatever merit there is in such a plan is due to the fact that the mental capacity of the pupils in the special

class is so nearly uniform that they can achieve equal, or nearly equal, results in the same amount of time. Obviously, to progress together for any considerable time, the members of the special class should have approximately the same intelligence quotient as well as similar mental ages. Because of this fact, the methods of selecting such groups become highly important.

A fourth, and at present very popular, method of dealing with exceptional children is to classify the entire school or grade according to mental capacity. Such plans, which at first were more commonly tried at the junior high school level, are now in operation in some school systems as low as the first grade. The Detroit experiment stands out prominently in this class of plans. The Oakland and the Berkeley schools are also typical of the more intelligent attempts consistently to apply this method to an entire system. There are many examples of the application of ability grouping to single grades or divisions of a school. The chief arguments for this method of treatment are that better teaching can be done with homogeneous groups and that the pupils in these groups do better work. While there has not yet been a sufficiently comprehensive experiment to furnish a valid basis for evaluating the scheme, it is evidently proving satisfactory to the majority of those who have tried it. Such a plan is, however, still distinctly in the experimental stage, and a final evaluation is hardly possible until a generation of pupils have been handled in this manner. Some of the most persistent criticisms of the plan have been focused on possible undesirable social outcomes. While most of these fears seem ungrounded, it is evident that only time will make possible a final answer. For school systems which must have two or more classes at the same level, homogeneous grouping seems to be preferable to random grouping. Homogeneous grouping makes possible variation in rate of progress, in curriculum, and in method. Unless the ability grouping is followed by a varied type of class procedure, there is, of course, no justification for the plan. This type of treatment of exceptional children possesses many possibilities which have not yet been tried.

A fifth method of adjusting the school to the needs of exceptional children has for its aim the better education of the superior child.

This plan, which has never been adequately described in the literature of education, has been worked out in great detail by Superintendent French at Drumright, Oklahoma. In this school system it has been clearly recognized that both curriculum and method must be modified for exceptional children. Accordingly, the work of the school has been so organized that the brighter pupils who make satisfactory achievement grades are dismissed from the regular classes for two days each week. This allows extra time in which to give those who remain in the regular classes special explanation or drill on the topics which the superior pupils have no difficulty in learning in three days. For the brighter pupils a series of short courses, meeting two days a week for six weeks, has been organized. In these courses new materials are presented which do not appear in the regular course at all. Since the groups are small and contain only pupils possessing superior ability, a comparatively large amount of subject-matter can be covered in a very intensive manner. It is, of course, essential that these courses be specifically organized by the instructors with definite aims for accomplishment. To illustrate the nature of this work, sections will be quoted from a six-week course at the junior high school level offered by the social-science department. The course is entitled "Practical Banking." Its aims are:

1. To give the following information:
   a) Why banks exist, with brief history of banking
   b) The nature and scope of their business
   c) Their methods of transacting business
   d) The services which they render to the community
   e) How banks make money
   f) How they assist their customers
   g) The relation between the interests of the bank and its community
2. To dispel the mystery surrounding banks and bankers
3. To encourage an early connection and co-operation with local banks
4. To instil a spirit of thrift and conservation

The outline of the topics for the first three weeks is as follows:

FIRST WEEK

1. A brief history of banking, including a history of some famous banks
2. A history of money, the materials that have been used as money, and why gold and silver have come to be universally used as units of value

3. The history of the money of the United States
   a) The control of its issue and coinage
   b) Where it is made and what determines its value
   c) Why we use paper money

SECOND WEEK

The organization of a bank
1. How the different kinds of banks get their authority
2. The laws under which the banks operate and their supervision by governmental authority
3. The officers of a bank
   a) How they are chosen
   b) Their duties and responsibilities
4. The capital of a bank
   a) How it is supplied
   b) Its division into shares, stock certificates, their issuance, value, and transfer

THIRD WEEK

The nature of the business of a bank
1. As a place of safe deposit for idle capital
2. How it makes use of idle money
3. Loans, exchange, and collections
4. Inspection of local banks
5. The basis of credit, explained by local banker

The outline of the course is supplemented by a bibliography, which lists eight books and five periodical references.

Here is a definite enrichment of a certain topic in social science. In Drumright a considerable number of such unit courses, covering a wide range of topics, have been organized and taught during the past four years. Instead of marking time in the regular classes for two days a week, the bright pupil is securing a valuable body of information and is learning to use a method of intensive study which will be highly beneficial. By the organization of such courses, covering carefully related topics not ordinarily included in the regular curriculum, one can readily see that a type of education may be obtained by the bright child which is both qualitatively and quantitatively superior to that which is ordinarily received. It is obvious that the essence of this plan is not the method of organization into six-week special courses. Certainly there are possibilities here for well-directed reading assignments carried on in

an ordinary class group. The greatest difficulty in this plan rests in the detailed organization of a suitable body of material and in adjusting it to the needs of a superior group.

Five different methods of dealing with exceptional children have been described. It is not the purpose of the writer to attempt an evaluation of the various plans. It is doubtful whether final conclusions should be drawn at the present time. Rather, it is desirable that the various forms of experiments be continued until a larger body of evidence is available. There are, however, certain fundamental considerations which should be clearly in the minds of those who are concerned with this problem.

There is one principle of psychology on which the treatment of exceptional children must be based. This principle, which is not new, may be stated as follows: A child is educated, not by what the school presents to him, but rather by the response which he makes to what is presented. The response of a child is determined, not only by the nature of the material presented, but also by his general mental capacity and alertness. A question which produces a vigorous mental reaction from a bright child may produce no reaction at all from his duller neighbor. On the other hand, a simple assignment which produces a genuine response from the dull child will frequently not even secure the attention of the child who is intellectually more alert. Since the child's nature and capacity are determined by factors beyond the control of the school, it becomes the function of education to adjust its work in such a manner that each child will be stimulated to make as genuine and complete a response as his capacity will permit.

In attempting to meet the needs of exceptional children there are three fundamental modes of adjustment. These are variation in the rate of progress, variation in the content of the curriculum, and variation in methods of work.

Of these three possibilities, the first has been used most commonly. Many forms of flexible-promotion schemes have been tried. In most of these cases the same curriculum has been administered to all children, but in doses of various sizes. To a certain extent, a minimum-essential idea has been occasionally used, but, in general, this has meant little more than a subtraction of certain

topics from the standard course. What remains is not different from that found in the regular curriculum, the modification being a purely negative one. At the high-school level this form of adjustment consists in allowing the brighter child to save time by carrying extra subjects. Theoretically, the duller child should carry fewer subjects, although this seldom takes place in practice.

In essence, therefore, a flexible-progress plan attempts to adjust the work of the school to exceptional children by giving the same kind of material but at a different rate of speed. It is a serious question whether a genuine and vigorous mental response can be secured from exceptional children by this means. Furthermore, if a speed adjustment is carried to its logical conclusion, its results are entirely unsatisfactory. For example, if the proposal to keep a child at the level of his mental age is followed consistently, a child with an I.Q. of 150 will be entering college at thirteen years of age. This produces a social maladjustment which few are willing to defend. While a certain degree of speeding up, which does not take a child out of his social and physiological age group, may be desirable, it is evident that a speed adjustment alone is far from satisfactory.

The second mode of adjustment, that of modifying the curriculum, seems to possess greater possibilities. Those who advocate this method of adjustment maintain that, since the same stimulation produces very different types of mental response from bright and dull children, the best method of getting a more desirable response from each is to vary the character of the stimulus. Reduced to classroom practice, this proposal requires a real difference in lesson assignments for the bright and the dull. This may take the form of more or less extensive presentation of the same subjects or of the introduction of new and varied materials for the two groups, making a qualitative difference in the education received. The Drumright plan, for example, introduces topics into the curriculum of the bright child which do not appear at all in that of the average pupil. It is conceivable that the same kind of adjustment might be made for the dull group, providing specific practice in certain desired habits which are developed in an entirely incidental manner by the bright group.

This method of adjustment implies a variation in standards of promotion for children of different degrees of ability. It proposes that each child should carry a curriculum load fitted to his capacity and that promotion should depend on the satisfactory completion of this load. The greatest difficulty in applying this method is to reduce the general statement of curriculum modification to detailed assignments for the individual topics of each school subject. At the present time very little progress has been made in providing such detailed modifications.

The third mode of adjustment, that of varying the methods of work, possesses many possibilities. Applied to the superior group, this would mean stimulating intensive habits of study, urging greater initiative on the part of the pupils, and in every way attempting to secure achievement in proportion to capacity. For the dull it might mean even the abandonment of ordinary methods of procedure for more suitable methods. For example, if the reading process for the dull child is too slow to be productive in a content course, a "telling" method might be substituted. If simple impressions can be made more effectively through the ear than through the eye, there is no reason why this avenue of stimulation should not be used. A good listener may gain a more complete experience than a poor reader.

As long as the school insists on considering its standards as constant and fixed, with the child as the variable factor, any provision for exceptional children must be primarily a modification of the rate of promotion—some form of a flexible-promotion scheme. If one accepts a uniform curriculum as a necessary fact, the only logical adjustment for the exceptional child is to speed up the bright and retard the dull. Whether this is done by failing the dull pupil and speeding up the bright pupil, by establishing special classes with varying rates of progress, or by sectioning classes into slowly moving and rapidly moving groups, the plan is fundamentally the same, unless the curriculum and the method of teaching are modified. Viewed in the light of the response-concept of education, none of these plans seem fully satisfactory, since they attempt to secure a more vigorous response from the pupil, not by modifying the stimulus, but only by presenting the same material in varying amounts.

One method of treatment, the essential features of which are evident in several plans, proposes that, since there are genuine and wide differences in the capacity of bright and dull pupils, the only way to secure a satisfactory type of mental response is to make a real modification in the stimulus, i.e., in both the curriculum and the method of its presentation. This proposal goes beyond the minimum-essential idea. It admits of a small amount of flexibility in the rate of progress, but it recognizes the fact that the duration of the period of education is affected by social and economic factors as well as by school achievement. It recognizes the fact, for which there is considerable supporting evidence, that in the majority of cases the dullest 15 per cent of the pupils in the elementary school do not remain long after the end of the compulsory-attendance period. For this group it recognizes two alternatives; either retard such pupils by a uniform curriculum so that their total education amounts to a half-mastery of the formal subjects with practically no informational, social, or vocational instruction; or accept a partial mastery of academic subjects, allow regular promotions, and see to it that some genuine content education is provided at a higher level. This concept holds that, beyond the requirements for literacy, the social training of the dull is of more importance than the meeting of purely academic requirements. It demands a positive development of a curriculum apart from and beyond the minimum-essential plan.

For the superior group of pupils this plan likewise proposes a genuine enrichment of the curriculum. It maintains that, since they constitute the group which profits most from the treatment of the school, the bright pupils should be held in school as long as possible. But such prolongation of the school period can be justified only by providing a type of education which is both more extensive and more intensive than the average curriculum. The essential elements of this proposal are not dependent on any particular form of organization. The plan fits in well with sectioning according to ability, but it is equally possible in school systems which are too small profitably to attempt such organization. The two essentials of this proposal are, first, that the superintendent and the teaching staff shall make an analysis of the pupils so that the dull who need special aid and the bright who are capable of more work may be

definitely identified; and, second, that specific and detailed curriculum assignments shall be developed for the use of such groups. The proponents of this plan are fully aware of the difficulty of this second essential. Its realization will require far more thoughtful analysis and experimentation than any one school system can contribute. Its realization must be through a co-operative venture. They maintain that it is the only proposal which goes to the heart of the matter and recognizes that any genuine solution of the problem must go beyond a scheme of promotion or classification until it touches the intimate relationship of pupil and teacher and produces a better adjustment at that point. Individual differences can never be adjusted until the scheme of adjustment actually affects the stimulation and response of the individual pupil.

During the last decade the great majority of attempts to meet the problem of the exceptional child have proceeded along the line of some new reorganization. Periodical literature has contained many discussions of organizing special classes, of reclassifying according to mental capacity, etc. The writer has but one criticism of these plans. Any form of reorganization which does not touch the immediate relationship of teacher and pupil will not solve the problem. As long as the same curriculum and method are used to stimulate all pupils, regardless of their capacity, one is not justified in expecting an equally desirable educational response from all.

In the judgment of the writer, the next step in making provision for exceptional children is one of tedious detail. There must be developed, subject by subject and lesson by lesson, a curriculum modification and a method which will produce the desired type of mental responses from the bright and the dull. It is an extensive undertaking. It must be done mainly in the public school by public-school men. No other group has the opportunity for experimentally testing proposed curriculum modifications.

The ordinary teacher is not prepared to take the initiative in such an undertaking. School superintendents, from the standpoint of both training and experience, should be able to assume direction. Productive results should follow if, in a series of conferences, the superintendent and his teachers consider such questions as the

following: (1) What are the essential characteristics of bright and dull children? (2) In what manner may they be discovered? (3) According to the best analyses available, what are the educational objectives of each group? (4) Specifically, how may each school subject be modified so as positively to contribute to the special needs of exceptional pupils? (5) After identifying the exceptional cases in each room, what specific variations in daily assignments may be made, and how should the methods of teaching be adapted to their particular needs?

In the last analysis, the adjustment of the school to exceptional children is a classroom problem. Whenever qualified supervisors and teachers can be induced to attempt a detailed adjustment, subject by subject, to the capacity of bright and dull children, an important stage of progress will have been reached.

HIGHER STANDARDS FOR TEACHERS IN THE STATE OF WASHINGTON

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Two recent events in the state of Washington are destined to have far-reaching significance in the development of the teaching profession in the Pacific Northwest: first, the enactment by the legislature, just adjourned, of an entirely new certification law and of a law providing a state-wide retirement fund; second, the new requirements made by the School of Education of the University of Washington for life-certificates issued through the university.

The four northwest states, Washington, Oregon, Idaho, and Montana, have been gradually becoming aware of the fact that the qualifications for teaching in these states have been far too low. Throngs of teachers from the middle western states, where requirements are higher, who could not gain certificates in their own states have been drifting into the Northwest. Happily, the results, on the whole, have not been serious because thousands of well-qualified teachers, attracted by the exceptional climatic conditions and the desire to travel, make applications for positions. Oftentimes there are hundreds of applications for each vacant position. This has made it possible for boards of education to select the better qualified teachers.

However, as school boards and superintendents are not always discriminating, it began to be apparent that something ought to be done to insure a supply of highly trained teachers. In 1920 the Inland Empire Teachers' Association, which includes the four northwest states and which meets annually at Spokane, appointed a committee to formulate recommendations for uniform certificate laws for the four states. In 1921 this committee reported a plan which was unanimously adopted by the association. This plan was reported to the state teachers' associations of the four states. The Washington State Teachers' Association immediately appointed

a committee consisting of Irving E. Miller, State Normal School, Bellingham; William U. Neely, State Department of Education; Frederick E. Bolton, University of Washington; and County Superintendent F. V. Yeager, of Spokane.

In September, 1922, the committee of the Washington State Teachers' Association reported a plan indorsing in almost every detail the plan recommended by the Inland Empire Teachers' Association. This plan was adopted unanimously by the Washington State Teachers' Association. In conformity with the recommendations, the writer, as chairman of a subcommittee of the legislative committee of the Washington State Teachers' Association, drafted a bill which was presented to the state legislature. The bill was passed by both houses and has been signed by the governor. In the Senate only three votes were cast against the measure, and in the House only one. There had been such long consideration of plans that the teaching force of the state and many of the legislators had become thoroughly convinced of the need for a better certification law.

Under the new certification law, three types of certificates are recognized: (*a*) certificates issued by the state university, the State College of Agriculture, and the state normal schools, (*b*) certificates issued by the state board of education upon evidence of completion of approved academic and professional courses in accredited higher institutions of learning, and (*c*) certificates issued on the basis of examinations.

The regulations concerning certification by the state educational institutions remain unchanged. At the present time the normal schools may issue certificates valid to teach in the elementary schools of the state for periods of from two to five years on the successful completion of a one-year course, a two-year course, a three-year course, or a four-year course. The certificates granted on the completion of the two-, three-, or four-year courses may be validated into life-certificates upon furnishing satisfactory evidence of successful experience and proof of professional advancement.

The state university and the state college are empowered to grant so-called normal diplomas to graduates who have included in their curriculums, or have completed subsequent to graduation,

not less than twelve semester hours in the department of education. These normal diplomas are valid for a period of five years. Life-diplomas may then be issued to the holders upon proof of twenty-four months of satisfactory teaching experience.

Under the new law the state board of education is empowered to grant (*a*) standard elementary certificates and (*b*) standard advanced certificates to persons who have had certain approved institutional training. Graduates of four-year accredited high schools who have completed not less than two years of approved academic and professional training in an accredited institution of higher learning (normal school or college) may be granted a two-year elementary certificate valid to teach in Grades I to IX for a period of two years. The two-year elementary certificate may be replaced by a five-year elementary certificate on proof of satisfactory teaching experience of not less than fourteen months. A life elementary certificate may be granted to holders of the five-year elementary certificate who give proof of professional growth and who furnish evidence of twenty-seven months of successful teaching experience.

A standard advanced certificate, valid for two years to teach in all grades of the common schools, which include the high schools, may be granted to persons who are graduates of a four-year accredited high school or the equivalent, who in addition have been graduated from a four-year course of approved academic and professional training in an institution of higher learning accredited by the state board of education, and who have included for graduation or have taken in addition thereto not less than twelve semester hours of professional training in an accredited department of education. After fourteen months of successful teaching experience, this certificate may be replaced by the state board of education with a five-year state certificate. The five-year state certificate may be followed by a life-certificate upon furnishing evidence of professional growth, satisfactory completion of not less than twenty-seven months of successful teaching experience, and compliance with such other conditions as the state board may prescribe.

The intention is to provide for standard certificates through institutional training and to give normal-school and college gradu-

ates outside of the state an opportunity to comply with the requirements in Washington. The same requirements will also apply to graduates of other than state institutions in the state of Washington.

By approval of the state board of education, the law may be made to apply to the state institutions. It will then be possible for graduates of the University of Washington and of the State College of Agriculture to teach in the elementary schools and for normal-school graduates completing a four-year course to teach in the high schools.[1] Under the law of 1917 this was not possible, as the normal schools were specifically authorized to train and certificate for the elementary schools, and the state university and the state college were given the function of training and certificating for high-school teaching.

So-called limited certificates may be granted on examination. Candidates must be graduates of a four-year accredited high school and, beginning with September 1, 1923, must have earned not less than twelve quarter hours of credit in approved professional courses in an institution of higher learning accredited by the state board of education. After September 1, 1925, twenty-four quarter hours of credit in professional subjects will be required. After September 1, 1927, two years of approved academic and professional training must be taken before a candidate is eligible to the examinations. At least three-quarters of this work must be done in residence.

Although not stated in the law, it has been the definite intention of the framers of the law that certificates granted by the examination route shall be practically eliminated by 1927. Persons who desire a certificate, instead of taking the examination, will secure the certificate through institutional training. All candidates for the certificate by the examination route must then have had not less than two years of training, and they will secure this to escape the state examinations.

In order to forestall any criticism that might be directed against the bill by teachers long in service holding low-grade certificates, periodically renewable, the law provides that all such certificates may become life-certificates. In some cases, undoubtedly, the

[1] This point has been questioned and has been referred to the attorney-general for a ruling.

holders are scarcely deserving of life-certificates, but, from the standpoint of the profession as a whole, it was deemed wise to make the provision. It is only a question of a short time before all such certificates will have passed out of existence.

The only real struggle in securing the new certification law was over the question of city certification. For a long time the cities of the the first class had been empowered to grant city certificates. Although in most cases the law had been administered wisely and in the interests of the profession, it was believed that the time had come to have all certification under state management. As a compromise, cities will still be allowed to issue non-renewable, temporary certificates valid until the close of the school year in which they are issued. It is intended that these temporary certificates shall take care of persons who come into the state late in the year or who are employed to fill emergency vacancies. City superintendents may also issue special certificates valid until the close of the given year in special subjects like music, art, manual training, penmanship, kindergarten, domestic science, typewriting, stenography, and physical education, in any subject in night school, and in such other subjects as may be authorized by the state board of education. Gradually special certificates are being eliminated, and such subjects as manual training, domestic science, typewriting, stenography, and physical education will become regular subjects like history, mathematics, or the sciences.

A retirement fund was provided by the legislature four years ago for cities of the first class. This included only a half dozen of the largest cities in the state. The present legislature extended the provision so as to make it state-wide in its application. The essential features of the retirement fund are that all teachers new to the service in Washingto after the passage of this act shall be required to pay into the retirement fund $12 annually during the first ten years of service, $24 per year during the second decade, and $36 per year during the third decade of service. A total of $720 must have been paid by each annuitant before being eligible to the retirement fund. The maximum annuity available after thirty years of service is $480. Teachers who have been in service during a period of ten years or more are eligible to participation

in proportion to the number of years of service. The state failed to guarantee the payment of the annuity fund, but undoubtedly the amounts paid in by the teachers will be ample because, on account of the peripatetic character of the teaching profession, many teachers will pay in for periods ranging from one to nine years and not be eligible for annuity. If the funds are well invested, as they undoubtedly will be, the fund will be ample. This law, though inadequate, will tend to exert a stabilizing influence on the teaching profession in the Northwest.

Several bills were introduced but failed to pass which have a definite bearing on the future of the teaching profession. The normal schools asked the legislature to change them into teachers' colleges with power to grant degrees for four years of work. The legislature failed to do this, but it is only a question of time before such legislation will be enacted. Such legislation would undoubtedly emphasize the importance of professional preparation. Another bill which was killed during the last moments of the legislature sought to create a county unit. One of the outstanding features in the county-unit bill was to provide for a county board of education of five members to be elected by the people. This board was to have the power to select a county superintendent without limitation as to residence and to fix the compensation. The bill is sure to come up again in some form during the next session of the legislature and undoubtedly will be passed. A companion bill, also killed, sought to recognize natural community centers as a basis for the formation of school districts.

The recent changes in the professional training of teachers at the University of Washington represent a forward step. With the beginning of the academic year 1922–23, the new School of Education began to function. The essential changes from the previous organization are (1) that all work in education, with the exception of an introductory course, has been postponed until the junior year and (2) that additional residence work and increased professional training will be required for the life-diploma. The work in the School of Education puts the training of teachers and technical educational experts on a definite professional basis. Two years of professional training will lead to the degree of Bachelor of

Arts in education or to the degree of Bachelor of Science in education, depending on the major selected by the student. Students will be admitted after completing two years in the colleges of liberal arts, science, fine arts, business administration, and engineering, or from the normal schools. Special emphasis will be placed on graduate work and the preparation of high-school teachers, principals, college and normal-school instructors in education, and technical experts in education, such as research investigators in city school systems.

Students may receive on graduation a normal diploma which is a probationary state certificate valid for five years to teach in the high schools of the state. Those who expect to make teaching a profession and become candidates for the life-certificate will be required to return to the university for at least one quarter of graduate work and complete a total of thirty-five quarter hours in education. This will include the previous work which they have done as undergraduates. The minimum amount of professional preparation gives students from the various colleges of the university an opportunity to try out. If successful and thoroughly interested in the work, they must make serious preparation for a life-certificate. California requires a full year of graduate work for high-school teaching, and it is only a question of time before Washington will do the same.

Thus, by 1927, it can be said that the qualifications for teaching in the state of Washington have reached the ideals so often urged throughout the country, viz., for rural and grade teachers, high-school graduation plus two years of professional training; for high-school teachers, high-school graduation plus four years of approved academic and professional training. Through the action of the University of Washington the minimum standards are already passed, and soon the normal schools will raise the preparation of grade-school teachers distinctly above the minimum of two years of professional training. When the rural schools can have as well prepared teachers as the city schools will be determined largely by the improvement of transportation facilities and the formation of consolidated districts.

POSSIBILITIES OF SIMPLIFICATION OF ELEMENTARY-SCHOOL CURRICULUM THROUGH DEFINITE OBJECTIVES

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The elementary-school curriculum has grown by accretion. One subject after another has been added. At each addition the new subject has had to make a place for itself among those already recognized. This has gone on largely by legislative prescription at the request of some group or organization. In most cases the addition has been made without proper evaluation of its worth in terms of the subjects already required in the curriculum and without any re-evaluation of those already included. This type of enrichment of the curriculum, as it has been called, has continued in some cases until there are more than twenty required subjects. States vary greatly in the extent of prescription, some of them, in addition to naming the subjects, going so far in the case of certain subjects as to fix by legislative enactment the exact time allotment in minutes per week, while making less specific statements concerning all other subjects.

Such a process cannot go on forever. There must be sooner or later a scientific evaluation of subject-matter; there must be a limit set on the amount required; and there must be some clearly defined and acceptable ends to be attained. These are facts that are practically self-evident, and they call for a comprehensive educational program that will insure the establishment of proper standards, bounds, and relationships. Such a program will inevitably lead to the simplification of any elementary-school curriculum which is set up in harmony with it.

It is undoubtedly desirable that simplification be accomplished, and there seem to be two ways in which it can be done. One of these ways is to go through the present mass of prescriptions, select those which seem best, and secure the elimination of the

others. Another way is to establish the desired ends first, weight them in terms of each other, and then budget human experience leading to each of the ends in keeping with their respective weights and in proportion to the total time allotment. Such a process will force a careful selection so that in the elimination which takes place a proper balance will be maintained. There is probably no more scientific way of producing a simplified curriculum, and this is the procedure proposed in this study.

Efforts along the line of directing the curriculum by selecting the material for it have encountered two main difficulties. The first of these is the almost constant popular demand for the inclusion of some new material, regardless of the amount already prescribed; and the second is the insistence, mainly by those doing the work, that all that is now contained in the curriculum shall remain in it. Any policy which merely tries to block new additions or attempts to eliminate specific subject-matter already admitted will meet with but little success, as the rapid increase in requirements clearly shows. The well-known tendency in legislation is to increase the number of laws and prescriptions at every opportunity, and the case of subject-matter in the elementary-school curriculum forms no exception.

There is, therefore, but little to be expected along the line of simplification through the ordinary processes which have heretofore governed the development of the curriculum. Through these processes curricular additions and requirements have been continually increasing, thus making ordinary school administration more complex at every step.

The most hopeful move that has been made recently, so far as possibilities of simplification are concerned, is the set of educational objectives agreed upon by the National Education Association. This is a step in the right direction, and while there may be differences of opinion as to the validity of the objectives selected, there is unmeasured promise in them as a means of scientific evaluation of subject-matter, of directing educational work toward real and understandable goals, and of fixing the limits and bounds of educational efforts. These three things must be kept in mind in any attempt to secure proper emphasis on those things which are most

essential and those which are less necessary and to eliminate those which in a given situation should not be included.

The educational objectives set up by the National Education Association in 1918 are seven in number, as follows: (1) health, (2) command of fundamental processes, (3) worthy home-membership, (4) vocation, (5) citizenship, (6) worthy use of leisure, and (7) ethical character. There are other sets of objectives ranging in type from Münsterberg's abstractions to a set recently developed from Bobbitt's definition of an educated man. Any discussion of these would be out of place in reporting the study of a particular set of objectives with reference to certain specific uses.

The National Education Association, through a committee appointed for that purpose, developed and announced a set of educational objectives. This was well worth while. It made known the focal points which that body believed should be emphasized in the processes of education. This was probably as far as it was advisable at that time to go. The fact remains, however, that the use of these objectives was not very fully indicated. Their relation to each other and the relation of each to the whole were not established. They were suggestive but nothing more, and as yet nothing very satisfying as to definite uses has been produced.

This study is an effort toward making the objectives usable in a scientific way. After certain observations have been made concerning two of them, an attempt is made to weight the objectives as a guide in curriculum-making.

The objectives are stated in terms that overlap. It is practically impossible for it to be otherwise. Mutually exclusive terms dealing with the educative process are not easy to find. And yet the terms used do indicate generally observed focal points or points that are constantly emphasized by leaders in educational thinking. And these points do have some ratio of importance when compared with each other, and each one has some definite value as a part of the whole process. However, before proceeding to act on the undoubted validity of these statements, some observations are recorded concerning two of the objectives. "Command of fundamental processes" is different from the other objectives in that it deals with tools and is a means and not an end in itself. But it is

just as much an objective as the others and can be weighted in terms of the others. "Ethical character" or some kindred term has been for a long time considered the general aim of all education and, whether the term is correct, or whether we should call it "*X*," the fact is that the all-inclusive term cannot be rated as one of the component parts. For this reason this objective is left out of the weighting.

The plan of the study is very simple. Information was wanted on an administrative problem. Educational executives, therefore, were asked to furnish it. One hundred and fifty city superintendents of schools and presidents of teachers' colleges were asked to weight the National Education Association list of educational objectives in such a way as to make a total of one hundred points.

Eighty-nine executives replied to the request. Thirteen persons merely ranked the objectives, and fourteen wrote letters expressing a great variety of opinions. Sixty-two of the number weighted the objectives as requested. Their replies were tabulated, and the averages, medians, and modes were determined. The averages, however, are the most accurate measures, since the others are conditioned by the fact that the replies show a marked preference for the endings, zero and five. The averages follow: health, 18.4; command of fundamental processes, 30.8; worthy home-membership, 12.3; vocation, 10.4; citizenship, 17.6; and worthy use of leisure, 10.4.

The range in the replies was great, indicating considerable difference in opinion as to the weights of the several objectives. The following shows the range: health, 5 to 40; command of fundamental processes, 5 to 70; worthy home-membership, 0 to 25; vocation, 0 to 30; citizenship, 5 to 30; worthy use of leisure, 0 to 25.

Those who were unable to rank the objectives evidently thought of them in terms of their absolute value rather than in terms of the time and emphasis to be given them in a curriculum. For example, such a person might say that health is all-important and therefore cannot be weighted in terms of anything else. This is, of course, to miss the point of the study, which was merely to fix the relative emphasis to be placed on each of the objectives in the

elementary school. Although health may be all-important, the emphasis which should be placed on it in the elementary-school curriculum is small as compared with the total effort to produce well-balanced educational results. But whatever that emphasis is, it is susceptible of measurement in terms of the emphasis to be placed on the other objectives.

Another difficulty found by executives in attempting to assign weights to the objectives was their own lack of data on which to form reliable judgments. This is a real difficulty which, under present conditions, cannot be eliminated or ignored. But the fact is that, since not much reliable information has been assembled on the subject, if an executive is to make any use at all of the objectives in curriculum-making, he must rely on someone's judgment as to their importance. It is a matter in which his own opinion may be as good as that of anyone else. In the absence of information as to the views of other executives, the best he can do is to follow his own, though this may lead him into grave error if he should have a bias in regard to certain of the objectives. Whether or not he has such a bias, however, can be determined only by ascertaining the views of his fellow executives; and while he may not yield to a preponderance of opinion when presented, he will at least know that he is not in agreement with it, which is something he has not been able heretofore to know.

The results here assembled, then, may have this value, that they represent an average of opinion, which, in the absence of more authoritative data, may be used as a tentative guide in preparing the outlines of a curriculum for the elementary school. What must be done ultimately, of course, if the objectives are to be followed, is to collect data on the basis of scientific experimentation rather than to depend on the average of what may be considered the most enlightened opinion. However, even such opinion is a valuable guide and is a beginning point for scientific evaluation.

It is frequently charged and often conceded that the curriculum is overloaded, that the teachers have to cover too much ground, and that the children are forced to scatter their efforts over too many subjects, with the result that, instead of learning a few things well, they go over a great many subjects but achieve a mastery of

none of them. A set of weighted objectives will tend to accomplish two desirable ends. It will fix the proportion of emphasis to be placed on a particular line of effort, and it will also fix the bounds beyond which that effort may not go, thus establishing two very necessary conditions on which to base any proposed plan of simplification. Obviously, without established relationships and fixed bounds, no attempt at consolidation or elimination of subjects could be scientific.

Such a weighted set of objectives, then, may form the basis for the scientific treatment of the curriculum. It may or may not lead to a selection of essentials and to the elimination of non-essentials or those things least essential. That can be assured only through another process, namely, the budgeting of human experience in such a way as to force an evaluation of each curricular item in terms of the whole allowance in time and effort for the objective toward which it leads. In order to force such an examination of curricular material it will be necessary to cut the budget allotment of each objective to such an extent that only the best of the available material can be included. This is the way in which practically all economies are effected.

In order to determine the possibility of doing this, answers were sought to the question as to whether, by such a process, the essential work of the eight grades of the elementary school could be done in six grades. Many executives did not express an opinion on this question, but sixteen did not believe it possible to make any saving in time, while thirty-three expressed themselves as believing that a considerable amount of time, usually two years, could be saved out of the eight years of the elementary-school curriculum.

It may be concluded, therefore, that weighting the objectives is a step toward the simplification of the elementary-school curriculum and that by properly budgeting human experience according to these weights a material saving in time amounting to from one to two years may be effected, thus saving an expenditure of money ranging roughly from one-eighth to one-fourth, depending on whether the saving amounts to one year or two years.

Educational Writings

REVIEWS AND BOOK NOTES

The relationship between school achievement and mental capacity.—The significance of a child's score on a standardized educational test depends, not only on its variation from the norm for the child's school grade, but on the degree of mental capacity of the child. In fact, the intimate relationship between achievement and capacity is coming to be so clearly recognized that a combination score from the two types of tests seems to be desirable. Such a combination score has been used as the basic measurement in an investigation reported in a monograph[1] by Raymond Franzen.

The monograph reports an experiment carried out in the public school at Garden City, New York, in which the children involved were carefully tested, graded according to their apparent mental capacity, and then pushed in their school work as nearly as possible to the level of their capacity. The accomplishment ratio was used as the index of the manner in which a child's school achievement approached his capacity. This accomplishment ratio (Acc R) is determined by averaging the child's subject ratios (S R) for all of his school subjects. The use of the various quotients and ratios is likely to prove confusing to many readers. Not only has the author changed the designations which he has previously used, but other writers have used such terms in a very loose manner. Since the present monograph will probably have considerable influence on such terminology, the reader should acquaint himself with the following abbreviations:

> Q stands for Quotient, which will mean a Subject Age divided by a Chronological Age. R stands for Ratio, which will mean a Subject Age divided by a Mental Age.
>
> S Q means any Subject Quotient, that is, any Subject Age divided by Chronological Age, and S R means any Subject Ratio, that is, any S A divided by Mental Age.
>
> E Q means the average of all Subject Quotients and Acc R, the Accomplishment Ratio, means the average of all Subject Ratios [p. 17].

The meaning of such terms should be standardized as quickly as possible.

The degree in which a child is working up to the level of his capacity will vary toward a normal accomplishment ratio of 100. The validity of the various quotients used depends, of course, on the validity of the test measure-

[1] Raymond Franzen, *The Accomplishment Ratio.* Teachers College Contributions to Education, No. 125. New York: Teachers College, Columbia University, 1922. Pp. 60.

ments from which they are derived. The accomplishment ratio becomes a reliable index only to the extent that all of the tests leading up to it measure accurately the particular ability concerned. This is particularly true of the intelligence quotient which is the basic factor. To have full confidence in the accomplishment ratio one must likewise have confidence in the refinement of the test of capacity.

Two very significant facts stand out as the result of this experiment. The first is that it was found possible, by readjusting the child's school position and then pushing him to the limit, to raise the accomplishment ratio, in some cases, practically to unity. The second outstanding fact is that, under ordinary school conditions, the average child and the dull child are working much nearer to their capacity than the bright child. In other words, the chief waste in the schools is in the capacity of the superior children. In urging more attention to the superior child the author makes the following statements:

> First, our social needs demand special attention for the genius in order that we may better exploit our best nervous resources. Second, our educational needs demand it since the very bright as well as the very stupid disrupt calm and cogent classroom procedure. Third, they themselves demand it in order that they may, even when they do function as leaders, be happier in that function, since now they often lose much in social contact by peculiarities which prevent an integration of their "drives" into a harmonious economy of tendency. These peculiarities come from their continuous maladjustment, since when they are with children of their own mental maturity they are physically and physiologically handicapped; when they are with children of their own size and muscular equipment they are so far mentally superior that they are unhappily adjusted. Only classification on a large scale will allow sufficient numbers of them to congregate to correct this [p. 44].

Recognizing fully the significance of the problem, the reviewer is disposed to question the feasibility of the proposed remedy. Obviously, such classification is impossible in the greater number of schools because of the limited enrolments. Furthermore, classification alone is far from touching the essence of the problem. Only a genuinely varied educational procedure affecting both curriculum and method appears to be satisfactory. The problem of the superior child is not solved by securing an accomplishment ratio of 100 in the formal subjects of the average curriculum. The monograph has rendered an excellent service, however, in pointing out the results of an intensive program of school work.

G. T. BUSWELL

Experimental study in learning.—One of the recent Teachers College Contributions to Education is a report[1] of a series of experiments made with a group of 95 college students and with two groups of children. One of these

[1] Henrietta V. Race, *Improvability: Its Intercorrelations and Its Relations to Initial Ability.* Teachers College Contributions to Education, No. 124. New York: Teachers College, Columbia University, 1922. Pp. 68.

latter groups consisted of 43 children of superior intelligence, and the other of 172 children of average ability. The purpose of the experiment was to throw light on three problems: (1) the relation of gains in one type of practice to the gains in other types of practice, (2) the relation of the amount of improvement to the initial ability of the learners, and (3) the relation of the amount of improvement to general ability as measured by a mental test. The practice was carried on in several functions. The first of these was cancellation; the second, numerical addition; the third, multiplication; the fourth, language completion; the fifth, reasoning with history material; and the sixth, the Thorndike Intelligence Examination.

The gains which were made by the individuals in the various groups were first correlated with each other, and on the basis of this correlation the relation between improvability in the various functions was determined. In general, the correlations were low, and the conclusion which was drawn from this section of the experiment is that improvability is specialized. In other words, the amount of improvement which a person makes in one kind of learning does not give an indication of the amount of improvement that he will make in another kind. In the second part of the experiment, the gains made by the different individuals were compared with their initial scores. The conclusion which was drawn is that there is a definite relation between improvability and initial ability. The closeness of relationship, however, differs considerably in the various tests, and in no case was the correlation very high. With reference to the third problem it was concluded that the individuals of superior ability made greater gains than those of inferior ability.

The first conclusion will be seen to be somewhat contradictory to the third. If the individuals with superior general ability make greater improvement than those with inferior ability, and if this is true in the case of the various functions tested, there must be a correlation between the improvability in the various individual functions. The discrepancy may be explained in part by the fact that the amount of improvement made in the different functions in the first part of the experiment was determined by comparing the correlation coefficients, while in the third part of the experiment, the relation between general ability and improvability was measured by comparing the average improvement made by the two contrasted groups—those of low intelligence and those of high intelligence. The two measures are, therefore, not directly comparable, and it is possible that if the same methods were used in both parts of the experiment, the conclusions would not have been so divergent.

F. N. FREEMAN

A laboratory investigation of silent reading.—That the eye-movements of readers may serve as useful signs of what their minds are doing was an observation of one of the present reviewers in an initial study of eye-movements in reading made a number of years ago. He also, at that time, hazarded the observation that the careful dwelling upon each word and phrase, which is

the daily method of the classical student throughout many years of study, helps not a little in fixing a habit of slow assimilation. These and similar observations find ample support in an extensive laboratory study[1] of the reading of upper-grade and high-school students. Perhaps the chief significance of the present investigation lies in the demonstration that the laboratory methods which have had considerable influence in the recent reforms and advances in the teaching of primary reading may be profitably employed in the analysis and interpretation of the reading of older children.

The conclusions drawn from some of the earlier studies of reading are open to the interpretation that inappropriate eye-movements may be the cause of poor reading. This, as Gates has recently pointed out (*The Psychology of Reading and Spelling*, p. 57), is questionable, at least in the first instance, but, having become established through faulty adjustment in learning to read, the eye-movements are a part of the muscular sets and motor attitudes which must be changed before good reading processes can be established. Appropriate eye-movements and other motor habits may, moreover, become established for some kinds of reading and not for others.

The distinction between typical reading behavior and the analytical study of the reading material so commonly required in school is made emphatic.

> It is altogether probable that the constant emphasis of the schools on analytical reading may set up a general tendency in the mind of the pupil to feel that he is not doing his duty by a book unless he is perusing it slowly and laboriously and in a fashion which aims to find something in the passage other than the straightforward meaning. Most schools assign lessons of such brevity as to make it clear that pupils are not expected to do much reading. The time is then occupied in class in searching every nook and corner of the line for curious rhetorical or historical intricacies. In the meantime, the valuable habit of reading in a straight-ahead fashion suffers by disuse and by a series of involved distractions which bring into the reader's experience almost every other possible form of thinking [pp. 58, 61].

The study was carried on by the use of complicated laboratory methods involving the photographing of the eye-movements of a large number of pupils reading under controlled conditions and a comparison of the photographs. Numerous charts show the value of eye-movements in the interpretation of various kinds of reading. Those showing the eye-movements in reading foreign languages, Latin in particular, are most instructive.

The first problem considered is that of adjustments to changes in content. It is proved "that an increase in the difficulty of passages results in a change in the reader's attitude. . . . . There are various ways of meeting the complex situations that arise" (p. 12). For instance, the perceptual span may be decreased with a corresponding increase in the number of fixations per line, or the subject may rely on longer fixation pauses to give him the meaning, or he

[1] Charles Hubbard Judd and Guy Thomas Buswell, *Silent Reading: A Study of the Various Types*. Supplementary Educational Monographs, No. 23. Chicago: Department of Education, University of Chicago, 1922. Pp. xiv+160. $1.50.

may use both methods. The same was true when the subjects were tested with different kinds of reading material, that is, with fiction, easy and difficult poetry, geography and rhetoric texts, algebra text, and French grammar.

The second problem involves the effect of changes in the reader's attention. A study of the eyes during paraphrasing and during reading while the subject was looking for transitive verbs showed that analytical study involves eye-movements peculiar to it. Foreign-language study involves still a different effort.

The monograph is concluded by a chapter on the teaching of silent reading. Methods are not described, but the authors state that methods in the high school must be framed to meet the needs of the high-school standard of maturity just as those of the primary grades are being formulated to meet the primary level of development. They suggest oral reading in the first three grades with increasing emphasis on silent reading, fluent silent reading of the various types to be mastered in Grades IV, V, and VI. Above these grades a definite attempt should be made to apply the different forms of reading.

Some of the problems suggested in the monograph are: How shall rapidity of reading be induced and controlled? When shall the practice of skimming be taught and how is it done? How much should reading in the various subjects be controlled by the use of specific questions? How shall the student prepare his lessons in the various high-school subjects—by minute analysis, by skimming, by rapid reading, or by all three? What should he have in mind as he reads his literature assignment?

With regard to Latin, the authors say: "The whole subject has degenerated into an absolutely formal exercise in linguistic dissection" (p. 156). If this be scientifically proved, can it survive? Will French and the other languages break away from the traditional methods of Latin?

WALTER F. DEARBORN and DANIEL A. PRESCOTT

HARVARD UNIVERSITY

The Oklahoma survey.—A digest[1] of the report of the recent survey of public education in the state of Oklahoma, which was made under the direction of the United States Commissioner of Education, summarizes the important chapters of the original report and discusses the recommendations made by the committee.

Chief emphasis is given to the problem of finance. Oklahoma's efforts are measured by the amount expended for public schools for each $1,000 of estimated true wealth, while her ability to support public education is measured by the estimated true wealth per child. A comparison of the amount of effort made by Oklahoma with that of the other states shows the following facts:

Oklahoma ranks twelfth in the United States with respect to her ability to provide a school revenue; she ranks forty-second as to her expenditure for each $1,000 of

[1] *Public Education in Oklahoma* (A digest of the report). Washington: Bureau of Education, 1922. Pp. 70.

estimated true wealth; thirty-fourth as to the amount which she expends per child enrolled; and thirty-seventh as to the value of her school property per child enrolled. With respect to the percentage of population which is attending school she ranks thirty-third in the Union; thirty-eighth as to the average number of days attended by each pupil; and forty-eighth, or lowest, as to the percentage of enrolment which is in average daily attendance [p. 9].

An investigation of the conditions in representative counties and districts of the state, visited by members of the survey staff, revealed the underlying causes for Oklahoma's backwardness in education. The survey staff deplores the defects of district school organization, the inequalities of wealth in the units of taxation, and the unfair method of distributing state moneys. It urges the adoption of an educational platform including thirty-one important changes in administration and organization, the most important of which is the formation of a county unit. It recommends that one-half of the educational budget be provided for by a direct state tax and be apportioned to the counties on the basis of the number of teachers employed and the aggregate number of days of attendance.

In surveying the state department of education, the colleges, and the training schools, the surveyors examined the records and interviewed the leaders of each major department to discover the plan of organization, the adequacy of the facilities, the living conditions, and the opportunities for improvement. From the educational standpoint, they recommend that more attention be given to graduate work and that extension and correspondence work be encouraged. From the standpoint of administration, they recommend that the work of higher education be under the control of four boards of regents, one for the state university, one for the agricultural and mechanical colleges, one for the state teachers' colleges, and one for the Oklahoma College for Women. The handicaps under which some of the state institutions are laboring are made the occasion for the enumeration of the advantages of long tenures for college presidents and the reasons for the careful selection of candidates for such positions. A definite budget involving several millions of dollars to be expended for buildings and grounds and a flexible per-pupil allowance for equipment are recommended for all of the institutions of higher learning.

The survey staff found the rural-school conditions deplorably poor. Attendance is for short terms and is very irregular. The buildings and grounds are not, as a rule, sanitary, suitable, or well equipped. The teachers have native ability and professional spirit but are untrained and inexperienced. The instruction is very inferior.

> Entire reading periods were spent by the children reading orally for the most part in a very halting manner selections familiar to all of the pupils, without any attempt on the part of the teacher to question the children's understanding of the selection, to provoke the use of judgment, to explain meaning, which might not be clear to them, or to drill on difficulties [p. 44].

Every chapter of the report is concluded with a detailed list of constructive criticisms. Aside from changes in the unit of administration and taxation

and suggestions for the better training of rural teachers, one of the most important recommendations is that the state board of education should be responsible for a state course of study especially adapted to rural schools. New courses of study are also recommended for the village and city schools, both elementary and secondary. Most far-reaching of all, perhaps, is the recommendation that the state and county superintendents be employed, the one by the state, the others by the county boards of education, the selection to be made, regardless of place of residence or political affiliation, entirely on professional merit, and that the salaries be such as to command for these important educational positions the best available talent.

MAY L. STEWART

A technique for number-teaching.—Among the more recent developments of educational practice are the enriching of content subjects, the formalizing of drill subjects, and the motivating of all by an introduction of projects and problem-solving materials. A course of instruction[1] for giving number-ideas to the primary grades that is based on these developments has been prepared by Jeannie B. Thomson, an instructor in a training college in Manchester, England.

Accustomed, as we are, to precise methods of experimentation, with carefully controlled variables and scientific measurement of results, we rather expect to find the book largely descriptive of such procedure. There is, however, the other method of experimentation—that by which advance in education up to within recent years has largely come—the laying down of hypotheses and testing them by time and judgment. Such is the meaning of "experiment" as used in the title, and the book is a description of an elaborate technique in methodology, of value more to the teacher than to the experimenter.

The contention of the author is that experience and theory must go hand in hand in the building up of the child's concepts, as they have done in the developing of the science of mathematics. A practical problem will call for an advance in mental tools that will open up new avenues of power and consequent experience. Therefore, the teaching is closely connected with the practical, the desire for new knowledge in each case growing out of contact with concrete materials.

Early number concepts are made real by the counting process, colors, area, shape, arrangement, volume, and weight. A number of simple but ingenious devices are used, both before and after the introduction of the abacus. These are described and explained by the author. The aim in each case is to make the sense-impressions of numbers as familiar and as vivid as possible.

We are convinced that the mental operations of arithmetic can be correctly performed each in its correct place only when the child has first performed them more

[1] Jeannie B. Thomson, *An Experiment in Number Teaching*. New York: Longmans, Green & Co., 1922. Pp. viii+86. $0.80.

or less frequently on concrete material in actual situations demanding the operations in question. On the other hand, a final *mental* power is essential for advance. But this power can only be reached through making provision for the senses: these are still "the gateways to the soul." . . . . We educate his mental powers through the concrete, but we are always ready for the child to abandon the concrete and use the abstract idea derived from it [p. 84].

Administratively, the children are divided into four groups, corresponding to the different ages and stages of ability in the eight following steps:

1. Counting from one to ten. The corresponding symbols.
2. Analysis of the numbers from one to ten. Some idea of number-form.
3. Easy addition and subtraction of numbers not greater than ten. In particular, addition of the same small number several *times*, as a preparation for multiplication.
4. Our place-value notation up to at least one hundred.
5. The idea of multiplication and the building of easy tables.
6. The idea of division and division by very small numbers.
7. Notation up to one thousand; use of an abacus.
8. Easy addition, subtraction, multiplication, and division with help of abacus.

In presenting this sequence, we should remark that the child is not likely completely to exhaust any one of these stages before being ready for part of the subsequent one [p. 20].

The relation and debt of this system to the Montessori method are made clear in the opening chapter. The several methods of subtraction are taken up in detail, and their various merits are discussed. The author finds that difficulties are encountered with our system of place notation and with subtraction, addition, and multiplication, and she adapts her methods to the end of overcoming these.

DOUGLAS E. SCATES

Encouraging forest preservation.—The problems of forest preservation challenge the best thought of students of our natural resources. One of the most serious of these problems is that of educating the general public to the need for economy in the use of our resources, for the protection of our forests, and for an intelligent interest in forestry. It is to the youth of our country that we must look for the adoption and continuance of a constructive forest policy. A new book[1] takes as its aim the familiarizing of boys and girls with the needs and rewards of co-operative effort along this line.

The book deals with the leading tree families—with the habitat, the growth, and the characteristics of trees. It discusses the value of trees in preventing floods, in conserving moisture, and in preserving the natural conditions favorable to stream flow. The book deals also with the different kinds of wild game, valuable and predatory, as well as with the various kinds of trees and the uses made of timber.

[1] Charles Lathrop Pack, *The School Book of Forestry*. Washington: American Tree Association, 1922. Pp. 160. $1.00.

To illustrate what our country has done and has yet to do in carrying out the forestry idea, the author describes the governmental policy concerning our national forests, the national forests of Alaska, and the reservations which are the "playgrounds of the nation." This, however, he tells us, is but the beginning of forestry work. The book points out the need for experiment stations to determine the most economical ways of using lumber in various manufacturing processes and to try out nursery production. Legislation favorable to a sound forestry policy is also emphasized.

The book is suitable for supplementary reading in the upper elementary grades and is a valuable book for the school library. The author might have conveyed to the youthful reader, however, a more definite knowledge of how to distinguish the insects which he lists as harmful and how to know the trees which are most valuable. Some of the illustrations, in fact, might well have been chosen with this end in view. The author either has falsely assumed this knowledge on the part of the reader or has left this to the field of natural science. He has not, however, given any related bibliography which would enable the child to pursue the interests which the reading of the book should awaken.

By a reorganization of the material, more emphasis might be given to the need for intelligent co-operation on the part of the children. It is to be regretted that the author does not place last that part of the solution of his problem which presents the greatest appeal and that he fails to suggest the part that youth may take in the solution of our national problems. In spite of these deficiencies, the book is worth while as a wholesome attempt to present to children an appeal for forest preservation.

MAY L. STEWART

Health teaching in the schools.—The teaching of health cannot be thoroughly accomplished by the traditional courses in physiology. The problems of health, like most other problems, are being continually modified by the social changes which characterize modern life. The difficulty of maintaining a high standard of physical fitness is not the same in rural and crowded city environments. The older teaching of health emphasized mainly the personal aspects of the problem, but modern courses are giving an increasing amount of consideration to the more complicated topic of public health. Both the personal and public aspects of health teaching are treated in a recent book[1] by Ralph E. Blount. The book is suited to the maturity of junior high school pupils.

The first thirteen chapters, constituting approximately two-thirds of the book, are devoted to a detailed explanation of the functioning of the human body. While this involves a treatment of purely physiological elements, the point of view is that of function rather than structure, and the consideration of body function is motived by health interests rather than by the interests

[1] Ralph E. Blount, *Health, Public and Personal.* Boston: Allyn & Bacon, 1922. Pp. x+316.

of pure physiology. The topics in this portion of the book are presented in excellent fashion, the discussion being very readable and the scientific terms being carefully explained as they are introduced.

The five remaining chapters deal with public or community problems. The first topic presented is that of communicable diseases, the more common forms being discussed in considerable detail. The emphasis throughout is on prevention. The next two chapters are concerned with accident prevention and accident treatment. These are followed by discussions of healthful home conditions and the duty of the government in public health work.

As a whole, the book is an excellent piece of work. It is organized in a teachable manner, and suitable class exercises are provided at the end of the topical sections. The illustrations have real teaching value and give evidence of discriminating choice on the part of the author.

G. T. BUSWELL

Common science in the home.—In almost any modern dwelling there are enough mechanical devices to illustrate many of the common facts of physical science. The study of the operation and structure of such devices is important for two reasons: first, the information obtained is of great practical value to the student; second, the motivation furnished to the study of certain aspects of physics is very helpful.

A book[1] which deals with the mechanical appliances common to the modern home has been prepared by Edith Allen. The forty-four chapters in the book are grouped into eleven general divisions, each of which deals with a large topic. The first four divisions are concerned with devices for cooking, heating, lighting, and cooling. In its form of treatment, the discussion of heating is typical of the other divisions, explaining the structure and operation of hot-air furnaces, hot-water and steam heating plants, fireplaces, stoves, and gas and electric heaters. Excellent diagrams are furnished to illustrate the purpose of the various parts of the devices. The remaining seven divisions of the book present the topics of water supply, laundry equipment, devices for preparing and conserving food, house-cleaning equipment, motor power in the home, scales and measuring devices, and general appliances such as sewing machines, typewriters, etc.

The explanations are sufficiently simple to make the book usable in the upper elementary grades as a source of reference for pupils in general science or home economics classes. The book is both interesting and instructive.

A beginning book for primary singing.—The problem of teaching children to read music has not yet been studied by the careful scientific methods which have characterized the investigations of the reading of ordinary printed matter.

[1] Edith Allen, *Mechanical Devices in the Home.* Peoria, Illinois: Manual Arts Press, 1922. Pp. 252. $1.75.

The pedagogy of the beginning stages of music is accordingly less well developed than that of the subject of reading. A recent book[1] by Lauretta V. Sweesy, of Mills College, contains music material to be used for sight singing in the primary grades.

The pedagogical views of the author are summarized in the following quotation:

> The author believes in thorough preparation before using a book. Many teachers have grown weary and worn trying to help their classes in the reading of music, not realizing that the three phases of the work in preparation are
>
> *First.* Rhythmic writing of note values. (Without staff.)
>
> *Second.* Tonal relationship. (Dictation in short phrases.)
>
> *Third.* Staff writing. (Combining the two.)
>
> Children should not be expected to sing from their books before the above work is completed [p. 3].

The material in the book is divided into three sections. Part I contains simple melodies which, in most cases, involve only single-step and repeated tones. Only four rhythmic symbols are used, the quarter, the quarter rest, the half note, and the dotted half note. In Part II the melodies are somewhat more difficult, the intervals following chord lines. Part III introduces two tones to the beat, which is a new problem for the pupils.

Apparently not very careful attention was given to the choice of words for the songs. New words—in some cases very difficult ones—are introduced in such numbers that a first-grade child would doubtless experience some difficulty in reading rapidly enough to accompany the music. The brevity of the selections would, however, make it easy for the pupil to memorize them after hearing them read by the teacher.

Academic standards in colleges and universities.—In a country occupying such a large area as the United States, and with each state shaping its own educational policies, national unity in educational standards is to be attained only through conscious effort. So far this has not been realized, and the status of the smaller institution whose students desire to go elsewhere to study has often been called in question. It is encouraging, however, to see the progress which has been made in this direction.

There are several classes of accrediting agencies in the country, and the lists of the higher institutions that are accepted by these agencies, together with the standards that are required, are given in a recent government bulletin.[2] This is a revision of a bulletin issued in 1917 under the same title, compiled by S. P. Capen. The revision has added the lists prepared by different church boards of their denominational schools.

[1] Lauretta V. Sweesy, *Music Primer*. Boston: Ginn & Co., 1922. Pp. 84. $0.72.

[2] George F. Zook, *Accredited Higher Institutions*. Bureau of Education Bulletin No. 30, 1922. Washington: Bureau of Education. Pp. viii+106.

The bulletin is divided into four parts. The first part gives the lists of accredited institutions that are accepted by the thirty-nine different state universities where such lists are in use. In some cases these lists are very comprehensive. Part II gives lists of the institutions accredited by the forty-eight state departments of education, the standards in each case being given. Part III contains the requirements and approved lists of five voluntary sectional organizations and of the Carnegie Foundation for the Advancement of Teaching. The fourth part deals with the institutions accredited by church boards of education, giving for four denominations statements of the academic requirements.

The issuing of such a bulletin should do much to help in the work of establishing a national code of requirements for accredited institutions. At the present time it may be said that "there is no practical consensus of opinion as to what constitutes that much-talked-of entity, the standard college" (p. 4). The preliminary recommendations of a conference held in Washington in 1921 are given.

A similar study of accredited secondary institutions was previously made by Dr. Zook and issued as Bureau of Education Bulletin No. 11, 1922.

DOUGLAS E. SCATES

Educational legislation.—The United States Bureau of Education has recently issued a bulletin on school law.[1] This bulletin is a digest of state laws relating to education enacted during the calendar years 1920 and 1921. The plan of classification is such that the enactments of any state on any particular subject may be readily located. The laws are summarized in sufficient detail to show their main provisions and purpose. For the benefit of those who may wish to consult the exact text of any particular enactment, citations are made to the sources. The bulletin thus constitutes an index to all general educational legislation for the period covered.

I. N. EDWARDS

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[1] *State Laws Relating to Education.* Bureau of Education Bulletin No. 20, 1922. Washington: Bureau of Education, 1922. Pp. iv+270.

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